SEPTEMBER 1952

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Fire Prevention Week Issue

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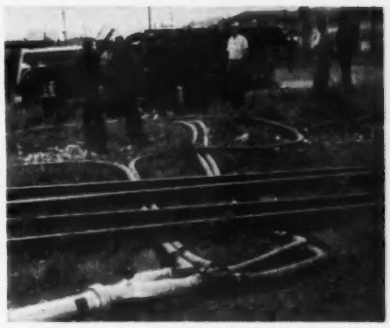
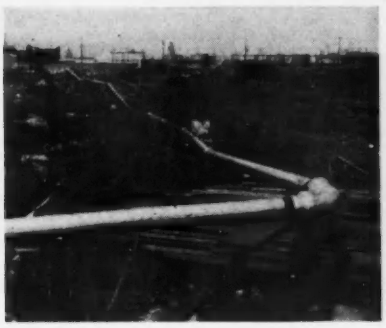
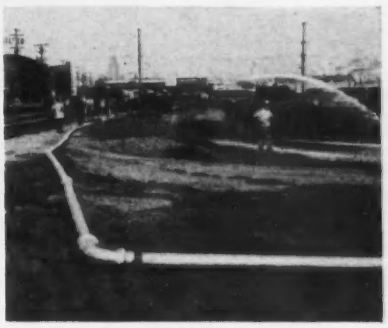


From pumper to Quick-Coupled Pipe...



...over uneven terrain...



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RESULTS:

From Hydrant psi.	Outlet of Pumper psi.	ABC Line Inlet psi.	ABC Line Terminal psi.	Nozzle Tip psi.	Discharge Nozzle Sizes	Gals. Per Min.
49	150	135	105	63	1¾"	778
47	200	180	145	74	2"	1023
43	220	190	120	60	2¼"	1168
55	240	240	240	(Static test)		

(Pipe weighs 42 lbs. per 20' joint, including couplers)

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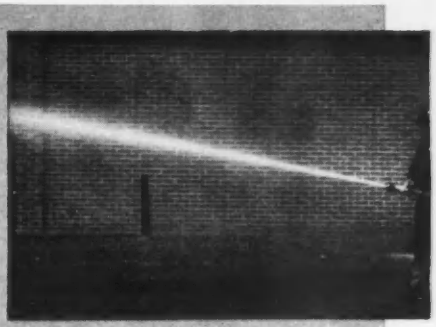

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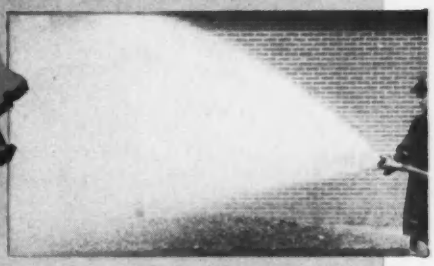

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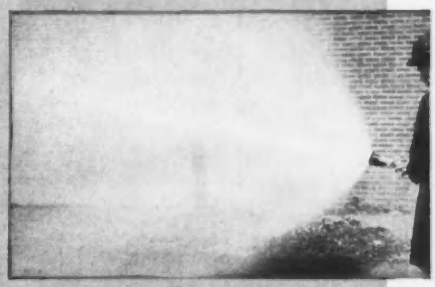

SOLID STRAIGHT STREAM AND WATER CURTAIN COMBINATION
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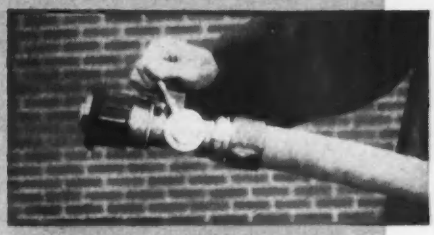

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Firemen

Volume 19 Number 9

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PAUL R. LYONS, ASSOCIATE EDITOR
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Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION

A VOLUNTARY NON-PROFIT ORGANIZATION
60 BATTERYMARCH ST., BOSTON 10, MASS.

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Civil Defense

The requested appropriation of the U. S. Federal Civil Defense Administration for the current fiscal year was $600,000,000. Congress appropriated $43,000,000. While some have interpreted this as to imply lack of interest on the part of Congress in the problem, the conference committee of the Senate and House which passed on the appropriation really appeared to slap down the FCDA for unnecessary bureaucratic empire building.

Most significant, however, appears to be the fact that Congress frowned on the general idea that the Federal government should bear all expenses for fire fighting, rescue and training equipment, and supplies. These and also certain other civil defense needs, as in engineering and welfare activities, seemed to the Congress to be expenses properly chargeable to the local government. The implication is that the state and local governments will have to bear a good deal of the additional expense for equipment which is to be applied locally for various forms of protection made necessary by civil defense problems.

The throwing out of $250,000,000 for starting a shelter program was not a failure to recognize the possible need of shelters but was based on the feeling that the Federal government should not be asked for money for shelters until better information was on hand. There is still a good deal of argument as to what shelter policy should be and cities have not as yet completed surveys of what their present shelter resources are.

In spite of the fact that the Federal Civil Defense Agency has been slow in furnishing state and local authorities the technical information needed about civil defense, the state and local authorities have steadily gone ahead with plans which are beginning in many cases to make very good sense. The state and local civil defense programs should not be disparaged because those in charge of them are feeling their way. There are a vast number of unknowns in the problem.

The fire departments and fire companies which have participated in various civil defense exercises have been finding out what their strong and weak points are and we should expect to learn a great deal from additional exercises which are held from time to time.

Cover Picture

This month's cover shows what happened at the Paloma Oil Field near Bakersfield, California, on July 21st when an earthquake shook butane tanks from their foundations. Escaping butane in liquid and gas form were ignited by sparks at an electrical transformer station. The resultant explosion started a series of scattered fires. Fourteen pieces of equipment and thirty-four men from Kern County responded and worked continuously for about fourteen hours before bringing the fire under control. Initial estimates of damage were in the vicinity of $1,500,000.

Safe Handling of Water Tankers

Because of the importance of water supplies for rural fire fighting many fire departments have acquired second-hand tank trucks for use as water carriers. Such trucks are rendering valuable service but it is vitally important that the drivers of these vehicles realize that they are not designed to compete with regular fire fighting apparatus both as to road speed or ease of handling. Otherwise more fatal accidents are almost certain to occur. NFPA-NBFU-IAFC specifications for water tank trucks caution against tank capacities in excess of 750 gallons for fire fighting apparatus. With the smaller pumpers a 300 gallon tank may be the maximum load that can be safely carried along with men, hose and other equipment.

Some departments having a large tanker make it a practice to carry the tanks only partly full to reduce the load especially in areas served by secondary roads and where bridges are not designed for heavy trucks. However, this may actually increase the danger of overturning the vehicle due to shifting of the water load when rounding turns. Unless the tank is well baffled or has several compartments it is usually wise to travel with a full tank when responding to a fire.

← Alone and uninformed . . .

and 3 die from fire →

Deaths from Oil Stove Fires

From an address by Chief John C. Klinck, Memphis, Tennessee, Fire Department, given at the 56th NFPA Annual Meeting in New York City

THE purpose of my discussion on deaths from oil stove fires is simply to bring to your attention the experiences we in the Mid-South have had in connection with the careless use of kerosene, and the misuse of appliances using this fuel.

I wish to assure you that I have no intention of discrediting any appliance using coal oil or the fuel itself, which has in the past brought so much comfort to humanity, but merely to bring out some facts about the numerous tragedies that have occurred and what we in Memphis have attempted to do about it in our city.

Chief John C. Klinck

In spite of the tremendous developments in the use of gas and electricity in home heating, and in the use of coal and of oil for fuel in furnaces, there is still a tremendous and even growing demand for the oil cook stove and the portable oil heater. These stoves have been perfected to such a point that the country dweller, to whom gas, electricity and even coal may not be available, can be quite as comfortable as the city dweller with his coal, or gas, or electricity.

The fuel most commonly used to feed the flame of portable stoves and heaters is kerosene, or coal oil, one of the principal petroleum products. From crude petroleum, through refining, comes light distillates, from light distillates comes naphthas and refined oils, from refined oils we get kerosene. In its simplest form, the process of petroleum refining consists of heating the crude oil to its boiling point, passing the vapors from the boiling oil through condensing pipes and condensing the vapors into liquids.

The approximate yield of kerosene from 100 gallons of crude oil is 6 gallons. This is a very small yield, but still coal oil remains one of the cheapest fuels on the market for cooking, heating and lighting. Because of its low cost, it is used extensively throughout the Mid-South rural districts, and even to some degree in the City of Memphis, where the light, gas and water division is owned by the people of Memphis, assuring a very low utility rate.

YEAR after year in our daily newspapers we have been confronted with stories dealing with deaths caused by the misuse of kerosene or the improper use of appliances. The lists of dead run into the thousands. Typical of some of these stories in brief are:

"Seven in one family die in Benton, Arkansas, because a small boy went into the bedroom to rekindle a fire with kerosene . . ."

"Boy, age 12, buried today at El Dorado, Arkansas. He was the victim of a coal oil stove fire that destroyed the school house and resulted in serious burns to a 53-year-old teacher. . . ."

"A 14-year-old Blytheville, Arkansas, boy dies from burns received when fire destroyed the family home where he was cooking dinner for his father and older brother. Coal oil is believed to have started the fire. . . ."

In my own City of Memphis, Tennessee, during the year 1951, we read of such tragedies as:

During the first three months of the "Anti-Careless Use of Kerosene and Oil Stoves Campaign" members of the Memphis Fire Department visited 13,950 homes in the city where kerosene stoves were used for cooking or heating. At each of the homes, the firemen gave advice and directions for the safe use of such equipment and warned of the danger of using coal oil to start fires in wood or coal burning stoves. During the same period 10,000 red warning tags with printed directions for safe use of the fuel were distributed by major oil companies in the city to all retailers. The tabs were attached to all containers in which fuel was sold to the consumer. Local radio stations and the newspapers gave a great deal of publicity to the inspection and fire prevention program.

The Memphis Fire Department is renowned for its fire prevention activities. During this campaign 24 firemen each day visited homes, industries, and distributors to stress the need for safe practices. Shown above (left) fire department members visit a fuel oil plant. (center) The "A" shift of fire fighters, who with the "B" shift, made a total of 14,567 home inspections. (right) "Briefing" before inspection in a room many visitors to the Fire Department Instructors Conference will recognize.

"Two children die in flaming house — mother and third child burned. A kerosene stove next to the bed where the youngsters were lying, set the bed on fire. The mother was in the street in front of the house and ran in attempting to rescue her children. A neighbor pulled her out and entered the house himself and was able to rescue one of the three children. . . ."

"Two children burn to death; fire was caused when a coal oil lamp was upset in an attempt to light the lamp while parents were away from home. Age 3 and 4 . . ."

"A second alarm fire at 1691 Ragan Street, took the life of a Negro infant, destroyed two homes and three automobiles and damaged two other houses. A kerosene stove explosion was the cause of this fire. . . ."

KEROSENE deaths for five years prior to 1951 numbered 14 in the City of Memphis; an average of not quite 3 a year. Because of this low death rate, kerosene fires were not given too much attention in our city. Then in 1951 we became aware of the seriousness of this hazard. On June 13, 9 deaths by fire due to the careless use of kerosene were on the record. Also, to this time there was a total of 50 alarms answered with the cause attributed to carelessness with this fuel. Of these nine deaths in the first half of 1951, six were children, the eldest of which was 4 years old.

IN VIEW of these deaths and unnecessary alarms, we of the Memphis Fire Department, called a staff meeting to formulate a plan of attack on these unfortunate happenings. At this meeting it was decided that ignorance of handling this fuel and the improper care of the stoves and heaters, was the prime cause of these deaths and alarms and that an educational program for kerosene users should be immediately instituted.

With all the resources of the Memphis Fire Department to throw into this project, we felt that a campaign of this type and scope should have some assistance from certain organizations, who were, directly or indirectly, affected by such a campaign.

The first group that came to our minds were the bulk petroleum people, the kerosene industry itself. These people were contacted and tentative plans for our "anti-careless use of kerosene and oil stoves" campaign was outlined to them. As a result, representatives of a number of major oil companies met at fire department headquarters and elected Mr. W. E. Hughey, of the Mid-South Oil Company, as Chairman of their cooperating committee. Other companies represented were: The Texas Company, Gulf Refining Company, Esso Standard Oil Company, Pan Am Corporation and the Shell Company.

This group urged other major oil companies to join in the movement and assist the fire department in a house-to-house canvass of Memphis districts.

The Real Estate Board of Memphis offered their help through the Board's Rental Property Management Committee, who pledged that organization's support and did a creditable job through their rental agencies.

There were 150 Negro pastors of the "Pastors Alliance" who pledged their support, and all Negro civic clubs throughout the city joined in helping to educate their people.

AFTER consultation with the various cooperating groups it was decided that the most practical plan to reduce the loss of life and property due to this type fire, was to educate the users of the fuel in the proper manner in which to handle, store and use the product.

An intensive study was made. Sections of the city where use of this type fuel and appliances predominated were shaded on a large map. Twenty-four firemen each day, working in two-man teams, were assigned to the Fire Marshal's Division and joined that force of thirty men to visit such homes, to show the occupants how to use and handle kerosene safely and how to correct and avoid common dangers. These people were instructed in the proper means of maintenance of devices or appliances using coal oil as fuel. After instructions and demonstrations were given, each householder was left a printed copy of "Safety Hints for Kerosene Users," which urged the following:

1. Never use kerosene to start fires.
2. Follow the manufacturers' operating instructions for your oil burning cooking or heating device. Instruction card should be posted near stove.
3. Burners should be kept clean at all times. Many kerosene fires are caused by stopped-up burners.
4. When wicks are burning low, they should be trimmed or replaced with new wicks.
5. Use *only* recommended fuel. Fuel should be free from any foreign matter that might clog burners or valves.
6. Kerosene cooking stoves should be provided with a drip pan beneath the burners, with legs of sufficient length to locate the cooking surface at a proper height for ordinary use.
7. Use any approved type stove. All approved type stoves bear the label of the Underwriters Laboratories (UL).
8. A leveling device should be used to see that all cooking and heating devices are in a level position.
9. Supply tanks should be filled on the outside of the building, using a funnel to avoid spillage. (Supply tanks should be cleansed of spillage, or kerosene on the outside before replacing in the stove. Close all valves before refilling supply tank).
10. Stoves should be located so that curtains or drapes will not be blown into contact with heated surfaces or open flame. (No combustible [burnable] material should be stored near any cooking or heating device.)
11. Never leave your lighted stove unattended:— If you leave the house, turn off the stove.

(*Please turn to page 21*)

Make Fire Prevention Week the "Kick-off" of Your Year-Round Program

Fire Prevention Week this year will occur October 5-11th. Many fire departments throughout the United States and Canada have already launched their programs for Fire Prevention Week activities. The back cover of August issue of FIREMEN Magazine carried illustrations of the materials and order blank which NFPA member fire departments may use to obtain their "ammunition." The form on the bottom of this page may also be used if submitted before September 24.

DURING the past two years there have been a number of commendable year-round programs of fire prevention that have produced tangible results. The National Fire Protection Association has continued its campaign through the Advertising Council. Every medium of communication is being utilized to promote fire prevention throughout the nation. Radio, television, newspapers, magazines and other media have offered co-operation for this worthy cause.

Readers of FIREMEN are reminded that they may obtain mats for newspapers and other promotional material by writing to the Advertising Council, 25 West 45th St., New York City, N. Y. Recently a new symbol for the Home Fire Prevention Campaign was adopted with "Sparky," the dog, to point out the fire prevention messages (see FIREMEN for July, 1952).

THE International Association of Fire Chiefs is continuing its year-round campaign to reduce deaths from fire, particularly children in homes. According to Chief Jay W. Stevens, executive secretary of the I.A.F.C., there has been excellent co-operation from many chiefs throughout the country. As part of this campaign many intensive house to house inspection programs have been conducted, particularly in California, Oregon and Washington.

NFPA member fire departments are reminded that they may participate in the Fire Prevention Week Contest which is conducted annually by the NFPA Fire Prevention and Clean-Up Campaign Committee. Contest entry blanks may be obtained from Melvin R. Freeman, NFPA Public Relations Manager, 60 Batterymarch Street, Boston 10, Mass. The Fire Prevention Week Contest closes November 30, 1952. Last year more than 2,000 entries were received from all over the world including one from an Air Force unit in Korea. Fort Wayne, Indiana, and Ottawa, Ontario, received the grand awards for the 1951 contest.

Details of the winning departments for 1951 and photographs of their entries were published in the February 1952 issue of FIREMEN Magazine.

GET YOUR ORDER TO NFPA BEFORE SEPTEMBER 24!

FIRE PREVENTION WEEK "AMMUNITION"

F-12-52

Quantity

_____ 1. Poster — $2.50 per 100, $17.50 per 1000.
_____ 2. Facts About Fire — $2.00 per 100, $15.00 per 1000.
_____ 3. Display Card — 25c each, discount for quantities.
_____ 4. Coloring Book — 5c each, $5.00 per 100, $45.00 per 1000.
5. Comic Books — 5c each, $45.00 per 1000.
_____ (a) Fire and Blast.
_____ (b) America in Flames.
_____ 6. Sticker — 15c for sheet of 50, discount for quantities.
_____ 7. Flyer — $1.00 per 100, $7.00 per 1000.
_____ 8. (a) Industrial — $1.00 per 100, $7.50 per 1000.
_____ (b) Home Inspection Blank — $1.00 per 100, $7.50 per 1000.
_____ (c) Mercantile — $1.00 per 100, $7.50 per 1000.

Quantity

9. Folders:
_____ (a) Handling Fires in the Open — $1.50 per 100, $12.50 per 1000.
_____ (b) Don't Burn Up Your Pay Check — $2.00 per 100, $17.50 per 1000.
_____ (c) There Is No Place Like Homes for Fire — $2.00 per 100, $17.50 per 1000.
_____ (d) Put That Fire Out — $2.00 per 100, $17.50 per 1000.
_____ (e) When Fire Strikes You — $2.00 per 100, $17.50 per 1000.
_____ Fire Prevention Week Handbook — complete plans for a successful campaign — 15c each.
_____ Firerule — slide rule which reveals fire causes, proper prevention, etc. 3¾ x 8, red and black. 3c each, $3.00 per 100, $25.00 per 1000.
_____ Fire Foibles — 5c each, $5.00 per 100, $45.00 per 1000.
_____ Preventing Home Fires — 25c each, discount for quantities.

Mail to: NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Street - Boston 10, Massachusetts

NAME _____

ADDRESS _____

CITY _____ STATE _____

Prices subject to 2% discount if payment accompanies order. All prices F.O.B. Boston. Orders shipped express collect. NFPA members may receive single copy of all items gratis. Others may receive sample of all items except "Handbook" and Display Card (item 3) free upon request. Items No. 1, 2, 4, and 9 (a) (b) (c) (d) (e) have space for imprints of names of campaign sponsors which may be added locally by purchasers.

Improved Automatic Sprinkler Heads

By Warren Y. Kimball, Manager, NFPA Fire Services Department

ATTENTION of NFPA member fire departments is called to the article on tests of new spray type automatic sprinkler heads by Director Norman J. Thompson of the Factory Mutual Laboratories and appearing in the July 1952 NFPA *Quarterly*.*

While automatic sprinklers have had an enviable record for more than 50 years, the development of new type spray heads as a result of fire test research at the FM laboratories in Norwood, Massachusetts, promises advances in the efficiency of sprinklers, perhaps comparable to those achieved by the fire fighting service through the use of 1½-in. "fog" nozzles in place of wasteful 2½-in. solid streams.

According to information presented by Director Thompson at the NFPA Annual Meeting and published in the *Quarterly*, some advantages of the new type spray heads appear to include: (1) better and more even distribution of water, (2) greater protection of ceiling areas, (3) conservation of water, (4) greater efficiency at lower pressures, and (5) efficient operation with smaller sprinkler head orifices.

WHILE Director Thompson does not say so, it would seem from the data presented, that the new heads will do much to reduce the area of competition for the use of limited water supplies between fire fighting services and automatic sprinkler protection. It has long been the view of the NFPA Fire Services Department that the sprinkler industry has failed to adequately take into account fire department use of water when estimating sprinkler flow requirements. With the new type of spray sprinkler heads giving better coverage even at extremely low pressures and with fire departments making much more efficient use of water by means of 1½-in. fog nozzles which Chief Layman has demonstrated have approximately 8 times the efficiency of solid streams as a medium of absorbing heat, the area of conflict between two great means of fire extinguishment (automatic sprinklers and the fire department) would appear to have been effectively removed.

Mr. Thompson points out, and Chief Layman's studies tend to confirm, that the improvement of sprinkler design has just begun. Our own prediction is that with ultimate sprinkler head design, much smaller flows at reasonably high pressures will give the sprinkler head an efficiency more closely approaching that obtained by fire department spray nozzles under pumper pressure. Fire department experience indicates that in general smaller flows at high pressures are superior to large volumes at low pressures.

Director Thompson theorizes that a reduction of oxygen content near the ceiling was perhaps in part responsible for the improved performance of the spray type sprinklers even at low pressures. This would appear to agree with the experience of fog fire fighters where water particles from fire department spray nozzles quickly absorb heat, are converted into steam, and the resulting expansion ratio of 1 to 1700 tends to exclude oxygen in the fire area.

* Also available in pamphlet form from the NFPA Executive Office; specify NFPA Pamphlet No. G46–1, 35 cents each.

FIRE officials in each community can render a real public service if they encourage the use of the new spray type sprinkler heads in all installations where sprinkler systems depend upon a limited water supply, particularly those sharing the supply from public mains of less than 8-in. diameter. If a property owner does not wish to replace all heads at once, a start should at least be made on upper floors where water pressure is lowest. Director Thompson states:

"The first obvious use for the new spray sprinklers is a replacement for the present standard approved sprinkler in locations where the fire hazard approaches the limit of ordinary sprinkler capacity or where the water supply is somewhat scant. Superior protection will be obtained with a given water supply with the same number of heads operating; and equal protection can be obtained with a greater number of heads in operation, even at substantially reduced flowing pressure. Such a substitution can be accomplished at considerably lower cost than any other available method for improving an existing sprinkler system."

Three sprinkler companies already are making the new heads and others are reported to be doing the necessary engineering preliminary to manufacture.

If the above suggested action is coupled with a firm insistance by fire officials that pumper operators must never operate with less than 20 lbs. residual on the pumper inlet gage when working from mains also supplying sprinklers, any conflict between these two vital fire protection services will be effectively removed and each will have sufficient water, even with limited supplies, to make their most important contribution to the control of fire. After all, neither sprinklers nor fire department hose streams used alone can approach the efficiency obtained by an intelligent and judicious use of water supply through both mediums.

Pump Installation at International Airport

Power and pumps capable of producing 34,000 gpm have been installed for fire fighting at International Airport, Idlewild, Long Island, New York. There are two identical batteries of 5 centrifugal pumps, one driven by 5 superior Diesel engines with a total of 1690 hp. and the other by 5 electric motors of 1460 combined hp. In addition a 20 hp. motor driven pump maintains a pressure of 165 psi in the ten-mile water system. Each group of pumps has two 2500 gpm pumps and three 4000 gpm pumps. Pumps have motor-operated valves. If the city water supply drops to 15 psi the main valves are closed automatically and water is drawn from four storage reservoirs having a capacity of 1,000,000 gallons.

Operating a Pumper Smoothly

Based upon "A Guide for Training Pump Operators" prepared by a sub-committee of the NFPA Committee on Firemen Training, headed by Robert C. Byrus, Director, Fire Service Extension, University of Maryland

CONTINUED operation of a fire department pumper at pressures and volumes that may be necessary to control serious fires requires that almost constant attention be given to the instruments, to give the operator knowledge of conditions affecting the pump, the engine, the water supply or the hose streams.

Any evidences of improper operating practices that may be disclosed by the gages or instruments should be heeded by pump operators. Improper operating practices may not result in immediate failure but rather may cause a cumulative stress or wear on critical parts that may cause a subsequent serious breakdown, possibly at a most inopportune time.

Some pump operators are fortunate in having an instinctive "feel" for the operation of machinery and can make refinements and adjustments as a matter of course. Others may allow an abusive practice to continue because they are unable to recognize danger signals.

Some pump operators succeed better than others because they take time and make an effort to acquire all the personal knowledge available about the specific pumper assigned to their responsibility, as well as obtaining an understanding of the general principles of fire department pumping work. Such operators usually are alert to any changing condition that could affect the smooth functioning of their pump, realizing that their part in the fire fighting job is at least of equal importance with that of the men at the nozzle. In fact, the effectiveness of a dozen or more hosemen using three or four streams of water may depend upon the skill of an individual pump operator.

Controlling Motor Temperatures

THE explosion of gasoline vapor in the engine driving a fire pump produces high incidental temperatures as well as the power needed to operate the pump. For greatest efficiency the engine should be cooled to run at a temperature between 160 to 180 degrees F. Cooling is done by the conventional practice of circulating water around the engine cylinders and by means of a fan to draw air through the radiator.

However, the cooling of a pumper differs from an ordinary motor vehicle because the pumper motor is called upon to operate at high speeds while standing still. The rush of air through the radiator caused by movement of the vehicle is lacking. To compensate for this, the capacity of pumper radiators may be larger than would be necessary for road performance.

Many pumpers also require a heat exchanger to keep engine temperatures down by absorbing heat from the water circulating around the cylinders. This is done by circulating water from the fire pump around a coil containing water used to cool the engine. With use of a heat exchanger the same water is used over and over in the engine. This permits use of an anti-freeze if necessary.

There is also a means provided for adding to the water in the radiator by utilizing water from the main pump.

The following precautions and suggestions concerning the control of engine temperatures:

a. Keep engine temperature at 160–180 degrees as recorded on the temperature gage. This is done by regulating the valve controlling the amount of water circulated through the heat exchanger. Keep this valve closed until the temperature reading indicates the need for cooling. It should be tightly closed at all other times.

b. The cooling of pumpers not having a heat exchanger may be done by adding water to the radiator from the fire pump. This valve should be opened very slowly to prevent cracking of the engine block when cold water contacts the hot metal. Remove the radiator cap to avoid building up a high pressure in the cooling system.

c. The hood of the engine may be raised to provide free circulation of air around the engine and to make points of maintenance accessible on some models.

Reading Engine Control Gages

AS JUST mentioned, the temperature gage is very important in giving pump operators information concerning the temperature of the motor. Other gages may be provided to record significant details concerning dependable operating conditions. The following concerns the reading of these gages.

a. A tachometer is a device for recording motor speed in revolutions per minute. It may be a separate gage or it may be an adaptation whereby the speedometer serves a dual purpose. It is desirable to have the speedometer register engine miles rather than road miles which indicate but a small part of the work a fire engine does.

Most pumpers carry a plate indicating the discharge and the engine speed at various pressures as indicated by the underwriters acceptance test. Where the engine speed is excessive for the work performed it is likely that the engine is not being operated in the proper gear ratio, or the transfer valve is not in the proper setting for the work being attempted, or there is some impairment of the water supply.

b. Observe the tachometer reading frequently while pumping and compare this with the pump pressure for any given layout. Familiarity with tachometer readings could allow the tachometer to be used as a substitute should the pressure gage become inoperative.

c. On some pumps a point may be reached while pumping where an increase in engine speed does not increase the pump pressure. This may indicate that the capacity of the pump or engine has been reached. The engine speed should be reduced until the pressure starts to drop and held at that point. Under this condition the only way to increase the pump pressure is to shut down one line or put on smaller nozzle tips. In some instances where very large volumes of water are being pumped, the engine will not be able to reach normal speeds and discharge pressures will be low. This indicates that the volume pumped is in excess of the ability of the power

plant. Again nozzle sizes should be reduced to allow engine speed and discharge pressures to be built up.

d. The oil pressure gage will indicate that oil is being circulated through the engine by the oil pump. The normal oil pressure for any specific pumper must be determined by each pump operator. A frequent check of the oil gage should be made whenever the engine is running. In event of a sudden failure steps should be taken to remedy the situation before serious damage results from stopping of the engine. The gage may not indicate shortage of oil until just before serious trouble occurs. A few pumpers have oil level indicators.

e. The ammeter will show the charging rate of the generator. It is a normal and good practice to carry batteries on fire trucks fully charged. The generator voltage regulator may cut down the reading on the ammeter for this reason. However, the reading should not show a discharge.

f. When a pumper has more than one ignition system the engine should be run so that all spark plugs are firing. Any spark plugs that are not burned clean with each explosion will become fouled to the point where they will not work.

Lubrication of Critical Points

Much of the success of a preventive maintenance program depends upon carefully following out the manufacturer's recommendations for both periodic and on-the-job lubrication. On some pumpers continued smooth operation depends upon oiling and greasing of critical mechanisms on the job. The manufacturer's manual should be carefully followed.

Use of Signals

A lot of lost time and confusion on the fire ground can be avoided by simple uniform hand and lantern signals between the hose crew and pumper operator. (See FIREMAN for February 1949.) Where a pumper is stationed a considerable distance from the fire, radio communications may also be useful. The hand or lantern signals selected should suggest the action wanted. For example, swinging the arms upward suggests an increase in pressure. Swinging the arms downward indicates that a reduction of pressure is needed. Holding the arms parallel may indicate that the pressure is satisfactory.

When increasing or decreasing nozzle pressure, a change of 10 or 15 lbs. at the nozzle generally is satisfactory to the hose crew. However, to get this change of nozzle pressure with lines of average length it is usually necessary to adjust the pump pressure by 20 to 25 lbs. to make the desired change at the nozzle. This is because the change in pressure results in a change in gpm flow and a consequent change in the friction loss in the hose.

With a 1⅛-in. tip friction loss equals nozzle pressure in 300 ft. of hose. If 10 lbs. more is wanted at the nozzle on a line 300 ft. long, 20 lbs. more pump pressure is required. If the line is 450 ft. long, 25 lbs. additional pump pressure will be needed to give 10 lbs. more at the nozzle. With a 1-in. tip friction loss equals pump pressure in 450 ft. of hose.

Shutting Down

AFTER a pumper has served its purpose of providing pressure to satisfy the hose layout needed to control a fire, a start should be made promptly to get the pumper back in service for another fire call. This should be done as rapidly as is consistent with the need for standing by against possible additional pumping service at the fire. Often, the first practice is to reduce any 2½-in. lines by attaching the 1½-in. leader lines normally used for inside service. The engine of the pumper may be idling or the pump may be maintaining 80 to 100 lbs. pressure in the lines used for overhauling. When it is certain that nothing more than a watch line is needed, the hose may be transferred to a hydrant and the pump released.

Shutting Down

The following suggestions and precautions apply to the procedure for shutting down:

1. Lower the pressure slowly by retarding the throttle as soon as there is no further need for pump pressure. Do not suddenly increase or decrease engine speed while pumping unless the pump is equipped with a quick action type of engine governor. Even the quick action throttle is intended for emergency protection of the hose crew. Engine and pump speeds should be raised or reduced moderately.
2. If the throttle control is of the screw-in type it should be turned at a moderate pace. If it is a lever working on a quadrant, the lever should be lifted so it does not drag across the teeth of the quadrant.
3. Close the throttle so that the engine is running at a fast idle before disengaging the pump.
4. Close the discharge gates slowly after pressure has been lowered.
5. As soon as the discharge gate is closed, open the bleeder cock to drain water from the hose line.
6. Water to the cooling system should be immediately shut off.
7. Release the pressure governor controls, or reset the relief valves to normal engine house setting.
8. Refill the booster tank with water.
9. Refill the gasoline tank as soon as practical. Replace oil in the priming pump if required.
10. After pumping from the water tank close the tank valve unless the pump is to be carried full of water.
11. Drain all valves, pump chamber and gages promptly in cold weather.

Never Too Late to Be a Fireman

ROBERT F. HAMM, Director, Firemen Training, Indiana Rating Bureau, reports that a man was enrolled in a fire department in that state after his death. The North Madison Fire Department was in process of being reorganized and membership was being solicited. Plans called for the building of a new fire station and the purchasing of some equipment.

A man in the community agreed to give a suitable site for the station, free of all charges. At the time he volunteered to donate the ground he also expressed a desire to become a member of the department. He died just three days prior to the time of the organizational meeting. His widow sent word that she would fulfill his wish and the ground would be donated.

The fire department members then placed the man's name on the rolls as a member and then marked it as deceased. His name will lead the roll of deceased members of the department.

Test facilities provided for the Fog Nozzle Test Committee by the American-LaFrance-Foamite Corp., included the backdrop (left) indicating horizontal and vertical range of fog patterns, a ladder pipe assembly with pressure gage rings and gages, and a run-off baffle to intercept discharge and reduce the effect of wind or turbulence. (right) A 750 gpm high pressure pump taking suction from a 500 gallon calibrated tank was used to measure nozzle flows. A fill line from a water main to the pump replenished the tank between tests.

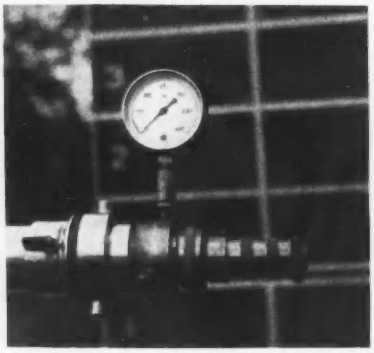
Fog Nozzle Tests for Fire Department Equipment Committee

DURING mid-July a sub-committee of the Committee on Fire Department Equipment (serving jointly for the NFPA and the International Association of Fire Chiefs) conducted flow tests on some 60 fire department spray or "fog" nozzles made by 9 different manufacturers. The tests were made under the direction of Robert C. Byrus, Director, Fire Service Extension, University of Maryland, chairman of the sub-committee. The work was done at the proving grounds of the American-LaFrance-Foamite Corp., near Elmira, N. Y., through the courtesy of member Hubert Walker of Alfco.

The tests included measurement of flows of the various nozzles at 50, 100, and 150 lb. nozzle pressures with all adjustable type nozzles set at 30°, 60°, and 90° patterns. Nozzles tested were in 1-in., 1½-in., and 2½-in. sizes.

Each test was photographed by Chairman Byrus against a standard backdrop. It is hoped that the photographs will be published by NFPA to give the fire service a visual indication of the patterns available from various sizes and types of fog nozzles. The various flow data should be extremely helpful to fire departments in adjusting pump pressures and hose layouts to get the best performance from fog nozzles now commercially available.

In addition to the various nozzle manufacturers who were most cooperative in loaning equipment, organizations furnishing personnel to assist in conducting the tests included the American-LaFrance-Foamite Corp., *Fire Engineering Magazine;* the International Association of Fire Chiefs; The National Fire Protection Association; the National Board of Fire Underwriters; the Fire Insurance Rating Organization of N. J.; the Bureau of Fire of the N. Y. State Division of Safety; and the Elmira Fire Department under Chief Louis B. Mosher.



Gage collector rings in various hose sizes were made especially for the tests and showed the pressures at the base of each nozzle. Pitot readings as used with solid streams would not be accurate with fog nozzles.

New York State Fire Instructors Frank Crowley and Don O'Brien assist Warren Kimball (at nozzle) in adjusting nozzle settings before flow readings were made.

Chief Henry Thomas, Chairman of the Fire Department Equipment Committee and Vice President of IAFC; Roi B. Woolley of *Fire Engineering* magazine; and Engineer Boyd Hartley of NBFU check pressure readings.

Two photos of crews conducting fog nozzle tests: Left hand photo taken July 10 (l. to r.), Sub-committee Chairman Robert C. Byrus; Boyd Hartley, NBFU; George Swan, Assistant Chief Engineer, NBFU; Herbert Bogardus, Superintendent, Engineering Department, Fire Insurance Rating Organization of N. J.; Don O'Brien; Roi B. Woolley, Associate Editor, *Fire Engineering* Warren Y. Kimball, Manager, NFPA Fire Services Dept. and Editor of FIREMEN; Deputy Chief Arthur Harris, New Britain, Conn. Right hand photo taken July 15, (l. to r.) Robert C. Byrus; Warren Y. Kimball; John Strong, Elmira Fire Department; Pump operator Donald Cram of "Alfco"; and Clarence Dougal, Engineer, Fire Insurance Rating Organization of N. J.

Splicing Burst Hose

FIRE hose that is properly cared for and is tested annually seldom gives any trouble, but occasionally a length will burst at a critical time when under pressure on the fire ground. For such emergencies most fire departments carry a burst hose jacket which can be snapped shut around the leaking area so that the flow of the stream may continue until the broken section can be replaced conveniently.

Quite frequently, however, failure may occur in a long line, as in a pumper relay at a rural fire, where no burst hose jacket is immediately available. The fire might get out of control if the line were shut down long enough to secure additional hose from a distant truck to replace the faulty section.

However, in such cases a quick and effective splice can be made by cutting the hose at the point of failure and shoving one part of the hose into the other segment as far as possible. The part placed inside must be in the direction of the flow.

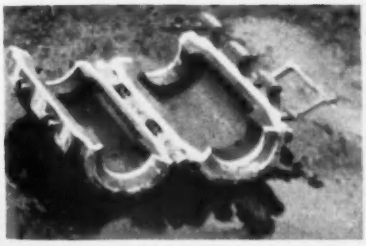
When the water is turned on, the pressure will lock the two pieces together so tightly that the splice will hold up to the bursting strength of the hose, providing the nozzle is kept open so that there will not be any back-pressure to push the hose apart.

THE same method may also be used where mis-mated couplings must be joined as sometimes happens in mutual aid operations and may occur in civil defense practices. If burst hose jackets are available, they can be used to join the mismated couplings. If not, one coupling can be cut off right where the hose is attached and the hose inserted as far as possible in the other coupling. This will not cause a loss of more than 4 or 5 inches of hose and the coupling can readily be reattached when the apparatus returns home.

One note of caution regarding this method of joining hose is advanced by a number of fire instructors. Just because it works so well on the fire ground firemen should not cut hose needlessly to make an emergency splice. Fire fighters have long been the "butt" of cartoonists for the ready use of axes for needed ventilation. If the public finds them cutting hose that cost perhaps $2 a foot, they may think the fire fighters are "off their rockers."

This hose happened to burst near the coupling during a practice pumper relay at the 1952 New York State Fire Instructors Conference. The relay was not interrupted. Instead the hose was cut in two at the point of failure, the line was kinked and the end shoved into the burst section so that the stream was continued. Had time been taken to cut out the torn section less leakage would have occurred but this would have taken longer. The water loss was not sufficient to affect the stream. Incidentally, if the leakage is severe from such a splice just raise the pump pressure to that called for by the next larger nozzle size and continue operations However, it may be desirable to keep the pressure low in the defective section and operate at the somewhat lower nozzle pressure that will result due to the leakage rather than have a second failure of the hose

Here two different hose threads were joined by cutting off one of the mismated couplings and inserting the hose into the other coupling. The line was secured with a rope as a precaution in case the nozzle should be partly shut in moving the pipe at the fire. This use of rope would not be necessary where the pipe can be left open.



A burst hose jacket may be snapped around a leaking hose line or two mis-mated couplings to permit the flow of water to be maintained.

Fire Prevention in Fort Wayne, Indiana

From an address at the 56th NFPA Annual Meeting by Chief George C. Hood, Fire Prevention Bureau, Fort Wayne, Indiana

Fort Wayne, Indiana, was chosen as the Grand Award winner among United States municipalities participating in the 1951 Fire Prevention Week Contest. A total of 2,164 entries to the Contest were submitted from all over the world. (See February, 1952, FIREMEN.*) In this digest of Chief Hood's address readers will find descriptions of some of the activities that sparked the Fort Wayne Fire Prevention Bureau to its winning accomplishment.*

IN FIRE prevention, or fire fighting, or any other angle of the fire profession, the main thing to do is to sell your department. You and I have a product to sell, just as much as anybody who is in the selling game. Our product is the saving of lives through fire prevention.

I think you will agree with me, that although our primary purpose is to put out fires we can't sell our fire departments through that action alone. The average individual doesn't know a good fire job from a bale of hay until he is personally involved. Then if he has a fire and you do a good job, it is wonderful. You have sold your department to one person.

But in this field of fire prevention you have an opportunity to go out and contact your entire community through public relations that you carry out in your fire department.

HERE'S what we accomplished in our city. Fort Wayne is no small community; we have 134,000 people and 52 schools. Members of our Fire Prevention Bureau appeared at Graduation Day. Our

Chief George C. Hood

part in the ceremonies was very brief, but we presented loving cups which were won in a fire prevention poster contest last October.

I wonder if a job of fire fighting would have accomplished what we accomplished there. In a very few months, or years, these high school students are going to be the business men and women of this country. If we did a good job that morning those children were going to remember the Fort Wayne Fire Department. You and I have to live on such public relations if we are going to deal with the American public.

ONE of our big problems has been this idea of approaching a high school student. In Fort Wayne one of the most successful functions in our program, as far as the high school student was concerned, was the conducting of a public speaking contest in the senior classes of every high school.

A boy who won the oratorical contest in his high school then went out into the city and appeared before some 52 service clubs in the City of Fort Wayne selling fire prevention for the Fort Wayne Fire Department. And, believe me, some of the stories that those high school children will tell are wonderful.

They certainly aren't the "dried-up" story of fire prevention that you and I so often tell. Those kids will go back and drag up things you never thought of, and they will do for you a terrific job if you let them get in and participate in your program.

ONE of the articles that impressed the grade school students was through the little coloring book that the NFPA sells. This book contains about 12 different lessons on fire prevention, but it has got to be used for the purpose for which it was intended.

We also tried a puppet show, whereby dogs and a penguin and five other characters were dressed, appeared before these children and taught them the lessons in fire prevention.

Another thing we accomplished in Fort Wayne was the mass evacuation of 125,000 school children controlled throughout a three-state area by radio. This has been watched for the past several years by civilian defense authorities who are interested in it as a possible pattern or organization to use if and when the need arises. For this mass evacuation, radios were set up in the school principal's office and the signals were transmitted through the public address system. Fire prevention talks were given by city officials, fire department personnel, and radio representatives. Then at a given time a signal was given by the Mayor of our City and the children from some two thousand schools over a three-state area, filed from their classrooms.

DURING Fire Prevention Week we also had our city buses painted with fire prevention messages. We worked for two days on

(*Please turn to page 34*)

(Right) The Fire Prevention Committee of the Fort Wayne, Indiana, Fire Department.

This spectacular flight line fire caused $700,000 damage to a Constellation in New York on April 21, 1952. (*Associated Press Photo.*)

Don't Be *Too Late with Too Little* At Your Airport!

Delayed alarm plus severe structural and contents fire hazards caused this heavy loss at Fort Wayne's Baer Field, January 16, 1950. (*Bob Smith, Journal Gazette*)

By George H. Tryon, III, NFPA Assistant Technical Secretary and Secretary, NFPA Aviation Committee

THE fire record data on aircraft hangar fires shows that in more than half of the cases, fire department arrival was seriously delayed by the distance equipment was forced to travel to reach the scene. Hangars burn too quickly to tolerate such delays. In 22% of the fires reported to the NFPA, the hangar and its valuable contents were destroyed before the fire department arrived!

Delayed alarm is an airport tragedy as it is in other classes of property. NFPA studies show that in 37% of the cases, detection was delayed and, what's worse, in another 25%, alarm transmission was held up by those who discovered the fire.

You can't move the airport to the center of town. You can't move Fire Headquarters to the airport. But, you can establish an airport fire station, if conditions justify, or, at least, organize an effective brigade and arrange for interim protection (including automatic fire detection) at the airport till you can get there with your full department strength. No airport is too small for a fire brigade!

Water — Water — Nowhere!

Water mains at airports are as rare as Democrats in Maine. Except at certain former Air Force or Naval Air Stations and at airports whose hangars are protected by sprinklers (alas, too few), fire service water supplies are largely non-existant. Unfortunately, for the type of fires you are liable to experience in hangars, you ordinarily can't carry enough water with you to fight the fire effectively.

Plenty of water must be available and accessible if you are to handle hangar fires that get beyond the control of extinguishers and installed special hazard protection. While in some situations, adequate water supplies will be expensive to provide, in others reservoirs or cisterns might be easily arranged. The type of system needed will depend on local conditions, but in most cases it doesn't have to be a fancy set-up. If responding fire fighters know where to go and are suitably trained to use their pumps, a lot can be done with a little.

Why Hangars Burn Fast

Since over 50% of hangar fires of known cause originate as a result of aircraft maintenance and storage hazards, it is obvious that the fires have sudden and unpredictable beginnings! Furthermore, NFPA Records show that in 86% of the hangar fires on record, gasoline is involved. This latter fact does not slow down the spread of flames once started!

Someone has to receive the alarm and respond quickly with the proper equipment to do something about each hangar fire before it gets out-of-hand. You can't let a hangar fire burn while you travel, one, two, five or more miles and expect to find much left when you arrive!

Most airports having commercial scheduled passenger flights need an airport fire department. Aircraft crash protection requirements dictate that as well as the protection required for the physical property located there.

If you do not have such protection today at your airport, investigate the situation thoroughly and evaluate your actual and moral responsibilities toward the flying public and the airport's fire safety.

Cities like Atlanta, Buffalo, Dallas, Denver, Fort Worth, Houston, Indianapolis, Jacksonville, Kansas City, Los Angeles, Minneapolis, New Orleans, Omaha, Philadelphia, San Antonio, San Francisco and Syracuse have fire apparatus stationed at the airport with trained city fire department personnel manning the equipment.

A majority of the personnel of airport fire brigades need only to be organized and encouraged to be effective fire fighters. Most of them are technically trained and realize they are handling a "fire-brand" as they work over aircraft. The trouble is that, like gas station operators, they become callous to the danger and unless someone in the fire service takes an interest in their hazards, they will ignore them.

(*Please turn to page 33*)

Because Chicago Fire Department equipment and personnel are stationed at the airport, this fire was nipped in the "bud."

"Indirect" Fog Application Stops Church Fire

Report and Photos by Chief F. R. Dimond, Hutchinson, Kansas

THE following is an account of a church fire which we extinguished by indirect application of water. The fire occurred at 1:25 A.M. and was answered by the Chief, one Assistant Chief and two engine companies. Engine 4, a 750 gpm pumper was 12 blocks away and Engine 1, a 1000 gpm pumper was 24 blocks away.

Engine 4, the first company in, laid a 2½-in. line from the hydrant to the intake of the pump, taking a 1½-in. line equipped with a fog nozzle from the pump outlet.

Engine 1, the second company in, used its booster tank with ¾-in. fog nozzle and a second 1½-in. line equipped with a fog nozzle was taken from an outlet of Engine 4.

The church was a cement block foundation approximately 24 in. off the ground. There was no basement. There were 24 x 36-in. openings midway in the foundation wall on each side but they were covered with felt paper and 2 x 12-in. planks.

Yellow, heat-charged smoke was coming out all over the building. Flame was coming from the foundation openings covered with the felt tar paper and boards.

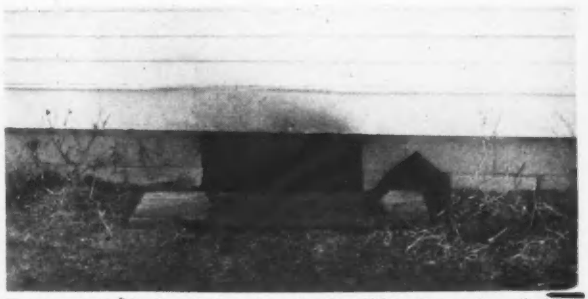
The first application of water was applied through the foundation openings with fog. Two men in self-contained masks and wearing heavy bunker clothing took a panel out of the front door to unlock the night lock but could not enter due to heavy concentration of heated gases and steam. Two windows were then broken on one side of the building and in a short time two men were able to enter. The only fire they found was deep seated in a wall where a transite flue went up inside the wall from the basement to the roof. This fire was extinguished by the straight stream of a ¾-in. Rockwood fog nozzle.

On inspection we found that the floor furnace had fallen through the floor and had burned a hole approximately 9 x 15 ft. and tapering to 3 ft. at one end. Some of the church seats had fallen through the hole. The floor joists were 2 x 10-in. covered by a 1 x 4-in. subfloor with regular flooring on top of that.

The fire had burned up the wall and into the attic where a number of the 2 x 8-in. ceiling joists were charred. Water was not applied in the main auditorium or attic with the exception of the straight stream used to put out small fires in the wall.

A rest room 26 ft. from the fire, with door closed, showed the effect of great heat and blistering of wall and paint.

In the front foyer off the auditorium could be seen the blistering of paint and water saturated carbon deposits on the wall. The outside of the building showed fog condensation that seeped through the boards.



The opening in the foundation where the first 1½-in. line equipped with a fog nozzle was used. The deeply charred plank was against the opening backed by 15-lb. felt paper. A 12 mph wind was blowing.

This is the door where firemen entered after fog lines had done their work. Note charred spots in the siding where hot gases, then steam, came through. Some carbon deposit and steam residue may be seen at various openings over the entire exterior.

Where the floor furnace dropped through the floor; flooring, sub-floor and 2 x 10-in. joists had burned away. This also shows where the fire burned into the wall, through the ceiling and into the attic where some roof rafters and ceiling joists had to be replaced. Yet no water was applied in the attic to extinguish the blaze. The ladder was placed by repairmen after firemen had left. Very little water was used and there was almost no sign of water after the building was cleared of smoke and steam.

Deaths From Oil Stove Fires

(*Continued from page 11*)

AT EACH of these homes the firemen left a small card bearing the telephone number of the fire department to be posted near the telephone. This card emphasized that in the event of fire, "Call the fire department first, then try to put out the fire or control it until the fire department arrives."

A pamphlet printed by the National Fire Protection Association, titled, "Operate Oil Heaters and Stoves Safely" was also left in the hands of the householder. This little booklet contained valuable information concerning oil stoves and was most educational.

In addition to making personal contacts through inspections, the Memphis Fire Department featured prominent displays throughout the city, including the effective window display shown above.

As the program progressed, we recommended to the oil companies that a red warning tag be wired to every container in which kerosene was sold. The tag would bear printed directions for the proper use of cooking and heating stoves using this fuel. It would also contain a warning against the kindling of wood or coal stove fires with coal oil, a cause of many disastrous explosions.

The Memphis Fire Department is very proud of its success with the "Anti-Careless Use of Kerosene and Oil Stoves" Campaign. As I have previously stated, in the four months before the drive was launched on June 18th, our city had 51 fires attributed to the careless use of coal oil or oil stoves in which 9 persons died.

In the following three months, when we made a check of the campaign's progress, there had been only 22 such fires with no deaths. At the end of the year our records showed only two additional deaths from kerosene fires, a reduction of approximately 78 per cent.

Figures show that in five and one-half years before the start of our campaign, Memphis had a total of 22 coal oil fire deaths, 9 of which occurred in the four months prior to June 18, 1951. The number of such fires ran into the hundreds. So far, in 1952, there have been no fire deaths from a kerosene source in Memphis.

Because of our campaign, we in Memphis, have reduced kerosene fires and deaths to a minimum, and believe that similar campaigns conducted in other cities where this fuel is used will produce the same results.

Fire Department Officers and Members

ALSO CIVILIAN DEFENSE

INDIVIDUAL CAR SIGNS

Made for outdoor use, rugged, do not rattle or rust, white base plastic, letter finished FIRE ENGINE RED. As ILLUSTRATED with wording under Fire Dept.:

Chief, Asst. Chief, Captain, Lieutenant, Member, Volunteer, Engineer, Driver and Police

63c each $1.25 pair

Order 50 or more and get your department's name or city for 88c each up to 99, sold in lots of 100 as above at $62.50; officers' names, if desired, are furnished from the plates named above, or special cut inverted letter, limited to 10 (roman) or 15 (condensed) type of lettering at $4.25 pair.

May be CEMENTED onto car body, attached to license plate or sun visor, 9½ x 2 inches in size. Also made 6 x 2 inches especially for cement.

Prices furnished for industrial badge plates, automobile dealers, special designs and occasions, school emblems with safety clasp pins. 2% off cash with order.

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YOU CAN Recommend

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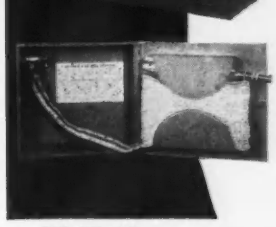
Fire Hose Station©

FOR SMALL STRUCTURES



Here, in one small (14"x12½" x4") steel cabinet is foolproof protection against most fires in up to 12,000 square feet.

Cabinet may be wall-mounted or recessed between studs, standard valve connects to regular water supply. No maintenance.

Instant-release rack holds up to 75-feet of ¾" linen hose, with adjustable nozzle locked-on and "faucet" valve.

Choice of four hose-lengths and accessories, priced from $31. Submitted for UL approval. Hundreds installed.

Write for details.

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Ansul Dry Chemical Fire Extinguishers are safe to use. Ansul Dry Chemical is non-toxic and it produces no toxic fumes when in contact with the fire. Safety for the operator is a prime consideration in the design of all Ansul Extinguishers. Every part which will be subjected to pressure can withstand many times the actual operating pressure of the extinguisher.

Because dry chemical is a non-conductor, Ansul Extinguishers can be safely used on fires involving high voltage electrical equipment. The long range stream also allows fire-fighting of any type of fire at a safe distance.

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There is no substitute for the extra protection, built-in comfort and longer wear you get by specifying Midwestern clothing. In our vast selection of rubber materials you will find the type of fabric exactly suited to your climate and needs. You can count on the softness and flexibility of the high-grade materials used to meet your most exacting requirements for lasting comfort and rugged service.

Due to government requirements for Midwestern Protective Clothing, prompt delivery will be assisted if you place your order early. For complete information, have your Midwestern dealer show you our full line. A letter to the factory will also bring you literature and material samples for your inspection.

MIDWESTERN MFG. CO., Mackinaw, Illinois
Manufacturers of the Famous **MACKINAW Coats**

Firemen Injured When Rope Breaks

TWO rookie firemen at the training tower of a large municipal fire department each suffered a broken foot a few weeks ago when the halyard of a 25-foot extension ladder broke allowing the fly ladder to fall on their feet which they had placed on the bottom rung to steady the ladder.

This again emphasizes the dangers of having feet on the rungs when the fly of an extension ladder is being raised. A man's grip on the rope might slip even if the rope did not break, especially where a ladder is being raised in the dark or under wet or icy conditions.

The NFPA Pictorial Training Manual "Handling Ladders" ($1.50 per copy) shows safe ways to raise extension ladders as recommended by the Joint Committee on Evolutions representing the NFPA Committee on Firemen Training, the Fire Department Instructors Conference, and the International Association of Fire Chiefs.

Another point emphasized by this accident, in addition to the constant need for alert supervision of inexperienced men at the training ground, is that fire department rope may have a comparatively short safe life. Some authorities recommend that ladder ropes and rope life lines be replaced at least once in eight years. The rope should not be expected to remain good for the life of the apparatus especially where rope has been subjected to alternate wetting and drying, intense heat, oils or abrasive materials that may have cut or damaged the fibres. All of these conditions are common to rope used in the fire service.

Does your department have any systematic program for inspecting, testing, and replacing aged or doubtful rope? Has this important program been made the definite responsibility of any officers or men?

For Sale

1938 Chevrolet truck equipped with front mounted pump, 500 gallon capacity. New tires, new motor, good running gear. Contact:

Forestville Volunteer Fire Department
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SEARS, ROEBUCK PROPERTIES

PROTECTED *Automatically* BY ADT

Sears' well-established reputation for high quality at low cost has been gained through astute purchasing and efficient operation. The same sound policy was applied in choosing electric protection service for the tremendous stocks of merchandise in Sears' properties throughout the country.

Like thousands of progressive business concerns, Sears found that appropriate combinations of ADT Automatic Protection Services give a higher degree of protection at lower cost.

Mail order houses, warehouses and larger stores from coast to coast are protected *automatically* by ADT to safeguard against fire, burglary and other hazards.

Automatic protection services for these establishments include: Sprinkler Supervisory and Waterflow Alarm; Aero Automatic Fire Alarm; Burglar Alarm; Automatic Heating and Industrial Process Supervision.

An ADT representative will show you how these services can help you solve *your* protection problems. Phone the ADT Central Station in your city or write to our New York Executive Offices.

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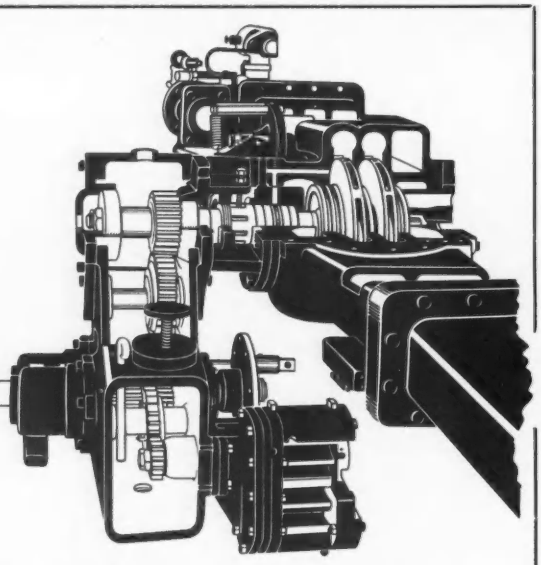
AMERICAN DISTRICT TELEGRAPH COMPANY 155 SIXTH AVENUE, NEW YORK 13, N. Y.

● Right -- Cut-Away view from right side of HALE Type ZL 2-stage 500 GPM Centrifugal Pump. The "ZL" Series fills a large demand for use in fighting fire with the popular 1½-ton and 2-ton commercial truck, or fire chassis.

● Write today for up-to-date Bulletins on HALE Fire Pumps -- they are built in ALL STANDARD CAPACITIES.



For Dependability Plus Efficiency

Specify HALE

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CONSHOHOCKEN, PA.

I've Been Penetrated!

. . . with the *improved*

FIREWATER,* the chemical penetrant that *now* gives you:

★ Corrosion no greater than *tap water!*

★ Surface tension of *31 dynes per square centimeter* when diluted 600 to 1!

★ Penetration that actually *sinks* raw cotton (as well as ducks)!

Already recognized as being the most effective, least expensive wetting agent on the market, the *new* FIREWATER is even farther ahead of the field. WRITE TODAY, ON YOUR OFFICIAL LETTERHEAD, FOR FREE SAMPLE AND NAME OF DISTRIBUTOR NEAREST YOU!

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FIRE and POLICE UNIFORMS

SHIRTS
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RUSSELL UNIFORM

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Please send free catalog checked below:

☐ Fire Department Uniforms and Equipment

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Membership Report

THIS month's FIREMEN will be distributed to 40,000 readers in every fire department in the United States and Canada. Each year the NFPA circulates this September issue to the complete mailing list to promote Fire Prevention Week activities and to make certain that every fire department has an opportunity to enroll in NFPA. The back cover of this issue explains NFPA Fire Department Membership and has an application blank for any individual or fire department wishing to enroll.

Since this time last year membership has increased steadily. At present 2,066 fire departments and volunteer fire companies have NFPA membership, with 24,788 fire fighters subscribing to FIREMEN. Past records indicate that there will be a continual increase towards the end of the year, with the greatest amount of new members enrolling as the new year begins.

NFPA Welcomes:

The following chiefs and fire departments who have enrolled as NFPA Fire Department members.

Alabama: Albertville Fire Department, Albertville.

California: Escalon Volunteer Fire Department, Escalon.

Illinois: Albany Volunteer Fire Department, Albany.

Minnesota: Rochester Fire Department, Rochester.

Montana: Lewistown Fire Department, Lewistown.

New York: Deansboro Fire Department (Barton Hose Company), Deansboro; Inwood Fire Department, Inwood; Lake Placid Club Fire Department, Lake Placid Club; Malverne Fire Department, Malverne.

North Carolina: Pinoca Volunteer Fire Department, Charlotte.

Ohio: Wyoming Fire Department, Wyoming.

Pennsylvania: West End Fire Company No. 2, Palmerton.

Tennessee: Chapman Highway Fire Department, Inc., Knoxville.

Virginia: Fredericksburg Volunteer Fire Department, Fredericksburg.

Wisconsin: Darlington Fire Department, Darlington; Eden Volunteer Fire Department, Eden; Fennimore Fire Department, Fennimore; Holmen Volunteer Fire Department, Holmen; Delton Fire Department, Lake Delton; Chief William Laach, Sheboygan Falls Fire Department, Sheboygan Falls.

New CUSTOM DIMENSIONS

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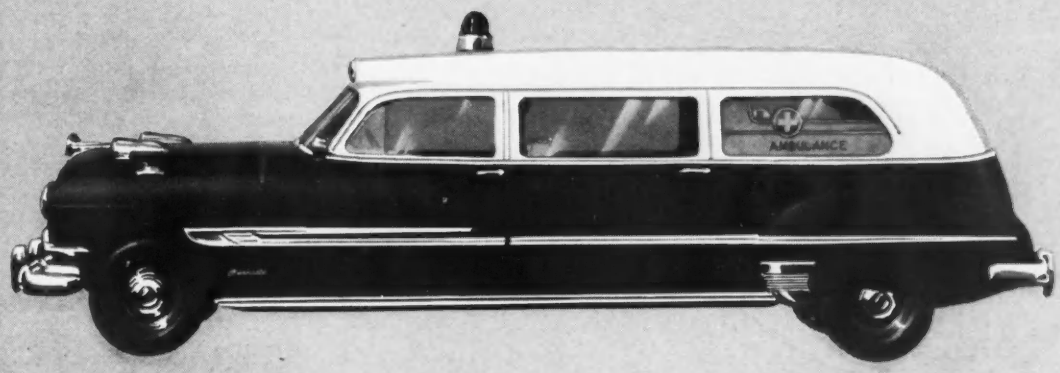
★ *New Thinking Is Swinging*

Leadership to Barnette



HEADROOM OF 46 INCHES
DOOR HEIGHT OF 39½ INCHES
DOOR SWINGS TO CURB FOR SAFETY
SPARE TIRE IS BEHIND DRIVER'S SEAT
MORE GLEAMING CHROME INSIDE AND OUT

THE BARNETTE "800" AMBULANCE —with its new custom dimensions and features, assures greater safety and service, especially for heart cases. Again BARNETTE leads with custom-made quality at assembly line cost.

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DUDLEY AND EASTMORELAND • MEMPHIS, TENN

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EVERY FIREMAN MUST KNOW

The Back-Pressure, Arm-Lift Method

of

ARTIFICIAL RESPIRATION

Experts teach straight from the screen, as this 16mm sound film shows and describes every phase of the resuscitation process. Precise commentary spot-lights every detail of hand-placement, timing and body position.

Price $37.50

Ask to have "Artificial Respiration" sent to you on approval. Review it free for five days before you decide to purchase.

SEMINAR FILMS, INC.
347 Madison Ave.
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Control Critical Situations

with a

SIREN LOUD VOICE

in

- **Rescue Work**
- **Crowd Control**
- **Search Parties**
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Portable battery amplifier leaves hands free. Light — only 12 lbs. Compact case. Built-in speaker, crystal mike, cord, batteries and trumpet. Standard batteries last 40 hours with continuous use. Case speaker easily heard in 100 x 100 ft. auditorium. Strong. Low Cost. Free Literature. Write Now.

Only $89.50

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Globe DURABLE FIREMEN'S **Suits**

when you invest in quick-hitch suits buy the BEST— buy GLOBE!

Before you buy ANY firemen's clothing, see the GLOBE line. We'll let you be the judge of their many practical features including the new Globe Neoprene* Interlinings. You'll find them durable; they'll give you more real lasting wear and protection than any suit on the market. Clip out the corner of this ad and get the facts. Do it now, today.

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Please send me, without obligation, your FREE catalog and samples of materials used in the Globe Suits. Also the name of the Globe Dealer nearest me.

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GLOBE MANUFACTURING CO.
PITTSFIELD, N. H.

*Made with 100% DuPont Neoprene

TRADE MARK

New NFPA Flammable Liquids Engineer

MILES WOODWORTH, former Fire Marshal of the City of Portland, Oregon, has been appointed NFPA Flammable Liquids Field Engineer. He succeeds Mr. Stanley Earle and his new duties will become effective September 1.

Mr. Woodworth has had extensive experience in dealing with flammable liquid fire problems from the municipal angle.

He joined the Portland Fire Department in 1935 after graduating from Williamette University in Salem. He was appointed Junior Captain of the Fire Department in 1939 and then in 1947 he was appointed Fire Marshal of Portland. In 1948 he was named "Young Man of the Year" by the Portland Junior Chamber of Commerce.

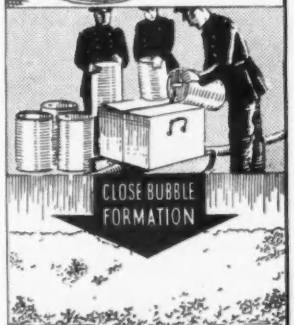
At the present time he serves as 2nd Vice Chairman of the NFPA Fire Marshals' Section.

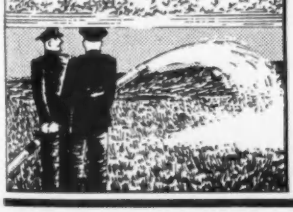
NFPA Inspection Manual

336 pp. $3.00 per copy

National Fire Protection Association
60 Batterymarch Street, Boston 10, Mass.

Kills Oil & Petrol Fires with SPEED & CERTAINTY





★ Nicerol is supplied in heavy gauge steel drums designed for quick release and clean pouring.

★ Nicerol can be used in any type of mechanical foam or air foam apparatus. In this case a base injection type in-line inductor is being operated.

★ The secret of Nicerol effectiveness lies in the small bubble formation. It creates a tough, efficient blanket. 3 gallons of Nicerol and 100 gallons of water will produce over 1,100 Imperial gallons of foam.

★ The above gasoline and oil blaze was extinguished in a matter of seconds by a normal mix of Nicerol Foam Compound.

Meet the hazard of fire with Nicerol, the foam compound that kills any oil or gasoline fire quickly and absolutely. Nicerol is a concentrate, producing a heavy type foam of closely-knit small bubbles which form a tough, vapour-tight blanket over the surface of burning oil or gasoline. It is characteristic of Nicerol Foam that it flows with the fire and is highly resistant to flash-back or re-ignition. It can be used successfully in any type of mechanical foam or air-foam apparatus — is equally effective with salt water or fresh and can be stored for years without deterioration.

TRADE ENQUIRIES INVITED

For further particulars, samples, catalogues, etc.

The Royal Navy and the Royal Air Force use it and so do Oil Companies, Fire Equipment Manufacturers, Civil Air Lines, several Commonwealth and Foreign Government departments, and Fire Brigades throughout the world. What better recommendation?

NICEROL LIMITED, LISBURN, N. IRELAND

Telephone: Lisburn 2027 *Telegrams: Nicerol, Lisburn*

THIS IS ALL YOU NEED TO MAKE 5,000 GALLONS OF AIR FOAM and it costs less than 5 lengths of hose!

Now—without sacrificing hose space—you can carry adequate air foam equipment. *All you need* is one Pyrene* No. 3 Forcing Type Foam Maker and four 5 gallon cans of compound. Only Pyrene makes it possible to produce air foam in volume with such minimum equipment. And with Pyrene it's easy to get into action fast. All you have to do is couple the foam maker into the hose and insert the pick-up tube into the can of foam compound—it starts making foam immediately.

Plan right now to equip *at least one* of your units with Pyrene. Due to increased oil and gas deliveries, more and more flammable liquid fires are occurring every day. Write for name of the Pyrene jobber nearest you.

*T.M. Reg. U.S. Pat. Off.

Pyrene AIR FOAM

PYRENE MANUFACTURING COMPANY

587 Belmont Avenue Newark 8, New Jersey

Affiliated with C-O-Two Fire Equipment Co.

3rd Ohio Fire Brigade Conference

THE Ohio Fire Brigades Association, Inc. is sponsoring its Third Annual Fire Safety Training Conference in Columbus, Ohio, September 17, 18 and 19, 1952. This conference is for leaders and members of organized private fire brigades. Mr. Frank R. Middaugh, Chairman of the NFPA Committee on Fire Brigades and Watchmen, is personally assisting at the conference. The conference attendance is not limited to private fire brigades in Ohio and all persons interested may attend. The program will include preliminary instruction and training for those desiring to organize fire brigades and in the training of newly organized brigades. There will also be two groups of advanced instruction.

The conference will be held at the Southern Hotel and reservations for hotel rooms should be made directly with the hotel. Reservations for the conference should be made by addressing the Ohio Fire Brigades Association, Inc., Box 66, Station A, Columbus 1, Ohio. Non-members of the Ohio Fire Brigades Association may register at a cost of $45.00 for one person which includes one year membership in the Association for his sponsoring company. This registration fee includes luncheon and dinner on September 17, luncheon and banquet on September 18, and luncheon only on September 19. Those attending will be expected to arrange their other accommodations.

Pamphlet on Fire Protection

STATE Fire Marshal Harry J. Callan of Columbus, Ohio, has issued a 1952 edition of a pamphlet entitled, "Legal Aspects of Fire Protection in Ohio." It is estimated that this 52-page booklet has been instrumental in bringing about a substantial increase in fire protection in the past six years. It includes sections on the organization of fire departments, purchase of equipment, contracts for fire department service, rights and liabilities of municipalities, firemen and departments. It also includes specimen forms for various contracts and records and an index of fire department legislation in Ohio.

New Jersey Fire School

THE New Jersey State Fire College will conduct an expanded program of fire training at Fort Dix on October 16–19. The week-end sessions of the program will be open to paid and volunteer firemen and members of plant fire brigades.

The program will cover instruction in fire fighting and fire protection and in the use and maintenance of fire fighting equipment. Enrollment will be confined to 500 registrants and limited to those who have had previous training in basic fire college courses. All registrants will be billeted at Fort Dix.

Dates to Remember

Illinois: The 62nd Annual Convention of the Illinois Firemen's Association, Inc., will be held at Peoria, October 28–31. Headquarters will be at the Hotel Pere Marquette.

Kansas: The Annual Kansas Fire School will be presented by theUniversity of Kansas and other cooperating agencies at Hutchinson, October 21–24.

Maryland: The Annual Short Course will be held on the campus of the University of Maryland at College Park, September 2-5.

Nebraska: The Nebraska State Volunteer Firemen's Association will hold their 70th Annual Meeting at the Hotel Fort Kearney, Kearney, Nebraska, October 20-22. For information contact Russell D. Salak, Secretary-Treasurer, P.O. Box 312, Schuyler, Nebraska.

New Hampshire: The 1952 New Hampshire Fire School will be conducted by the New Hampshire Fire Chiefs' Association at Laconia, September 21 and 22.

New York: The 12th Annual Convention and Tournament of the Jefferson County Volunteer Firemen's Association will be held at Black River, September 11 and 12.

The 8th Annual Fire Chief's Drill School will be held at Old Forge, September 20 and 21.

Virginia: The 1952 Virginia State Fire School will be held in Norfolk, September 8–12.

DON'T PLAY WITH FIRE!
Use *Safety Candle*
No Flame — No Dripping

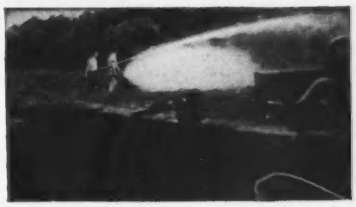
Sell Fire Prevention all year to choirs, processions, Glee Clubs, Colleges, School Plays, Pageants, Orchestras, etc., with *Safety Candle*.

Pipe lighted prism cut plastic flame, including two standard batteries. Four different colors of light available with color discs supplied with each *Safety Candle*. Low Price. Free literature mailed.

LOUIS J. LINDNER
153-NF West 33rd St., New York 1, N. Y.

Nip Brush Fires in the Bud with an FZZ

Be Prepared NOW to Fight Forest Fires with a HALE FZZ Portable Pumping Unit

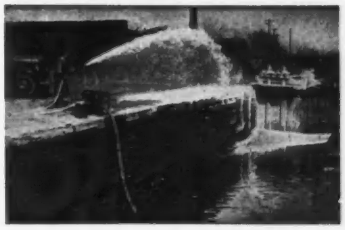


Above—FZZ Pumping solid stream and fog.

Above—FZZ Relaying through Major Pumper.

Above and at bottom are two on-the-spot pictures showing a HALE Type FZZ Portable Fire Pumping Unit fighting a brush fire from a moving truck. An FZZ can be mounted or carried on any type of equipment, making it a real "work-horse" for fighting brush, field and forest fires while in motion. Booster tank is used for source of water.

The Hale Type FZZ is a powerful, sturdy, ready-to-use unit built specifically for fire fighting. Compact, dependable and efficient, it will stand long hours of continuous pumping. The unit will supply from draft, 60 U.S. Gallons per minute at 90 lbs. pump pressure, and up to 150 U. S. Gallons per minute at 30 lbs. It can supply two capable fire streams through $1\frac{1}{2}$" hose lines using nozzle tips up to $\frac{1}{2}$".



Above—FZZ Pumping Foam (Foam proportioner built in if specified.)

NOTE: Discharge adapter can be supplied for use with $2\frac{1}{2}$" hose.

Available in carrying frame; mounted on two wheels; or mounted on rubber-cushioned steel channels.

Nip Brush Fires in the Bud with an FZZ

● *Write today for FZZ Circular. Ask for Demonstration.*

HALE FIRE PUMP COMPANY
Conshohocken, Pa.

● Fire Pumps in All Standard Capacities

WATER when and where you want it!

with **HARODIKES**
Portable Canvas Water Tanks
THE ECONOMICAL AND EFFICIENT WAY TO CARRY AND STORE WATER.

ON THE JOB - ON THE SPOT
KEEPING AMERICA GREEN

EXCLUSIVE FEATURES
- Self Supporting
- Easily Back-packed
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Available in 150 & 300 gallon sizes

A WATER SUPPLY AT THE SCENE OF THE FIRE

Write TODAY For Full Information and Price List
HARODIKES INCORPORATED
NORTH DIGHTON, MASSACHUSETTS

Better Hose Care--- with CIRCUL-AIR

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THE AIR CONDITIONING
FIRE HOSE DRYER

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. NO OTHER DRYING METHOD IS SO FAST—SO ECONOMICAL—SO EASY TO USE.

ACCEPTED • APPROVED • RECOMMENDED

ACCEPTED as the standard drying medium in over 1500 fire departments — APPROVED by the leading testing laboratories — RECOMMENDED by fire hose manufacturers and Fire Chiefs "all over America."

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If you are building, send for free copy of "Fire Station Design"

NEW HOSE DRYING MANUAL TELLS HOW TO DRY, STORE AND CONSERVE FIRE HOSE
May we send you one?

THE CIRCUL-AIR CORPORATION
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THE IMPROVED BLITZ BUGGY
200 Gallon Tank - 300 GPM Two Stage High Pressure Pump
HI-PRESSURE FOG EQUIPMENT COMPANY Old Forge New York

MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

How to Remember Approximate Flows Resulting in Various Pressure Losses in 2½-in. Hose

FREQUENTLY, it is important to know how much water can be moved through 2½-in. cotton-rubber-lined fire hose at a given pressure loss per 100 or 1,000 ft. of hose. Where the exact flow is known (as is seldom the case on the fireground), the friction loss in psi per 100 ft. with flows of over 100 gpm is readily determined by the familiar formula: $2Q^2+Q$ (where Q is 1% of the quantity).

However, fire apparatus, although equipped with gages recording pressure, lack flow meters so that in many cases the flow is not known when someone on the fireground desires to know about how much water can be moved, or is moving, through a given 2½-in. line with available pump pressure.

Accordingly, the following table is presented to show approximately how many gpm 2½-in. fire hose carries at a given pressure loss per 100 ft., or per 1,000 ft. It also serves as a reminder of how much pressure is lost in a given flow. Flows are given to the nearest 5 gallons for ease in remembering.

Here Are Two Important Books for Your Fire Department

"Attacking and Extinguishing Interior Fires"
134 pages 71 illustrations
$3.75 per copy

•

"Preventing Home Fires"
24 pages 25 cents per copy

Write To:
National Fire Protection Association
60 Batterymarch Street
Boston 10, Massachusetts

For convenience, the pressure losses are given for both 100 ft. and 1,000 ft. lengths of hose although in very long lines the figures may prove less accurate due to the fact that considerable difference in pressure at opposite ends of a long hose line may sometimes alter the performance of the hose sufficiently to cause some difference in friction loss readings. Of course, individual lengths of hose also vary in performance.

PRESSURE LOSSES FROM VARIOUS FLOWS IN 2½ INCH FIRE HOSE

PSI Friction Loss in 2½ In. Cotton-Rubber-Lined Fire Hose		Approximate Flows For Memorizing
Loss per 100 Ft.	Loss per 1000 Ft.	(Round Numbers)
15 gpm causes an additional lb. friction loss per 100 ft. or 10 lbs. per 1000 ft.		
3	30	105
4	40	120
5	50	135
6	60	150
7	70	165
8	80	180
10 gpm causes an additional lb. friction loss per 100 ft. or 10 lbs. per 1000 ft.		
9	90	190
10	100	200
11	110	210
12	120	220
13	130	230
14	140	240
15	150	250
16	160	260
17	170	270
18	180	280
5 gpm causes an additional lb. friction loss per 100 ft. or 10 lbs. per 1000 ft.		
19	190	285
20	200	290
21	210	295
22	220	300
25	250	325
30	—	360

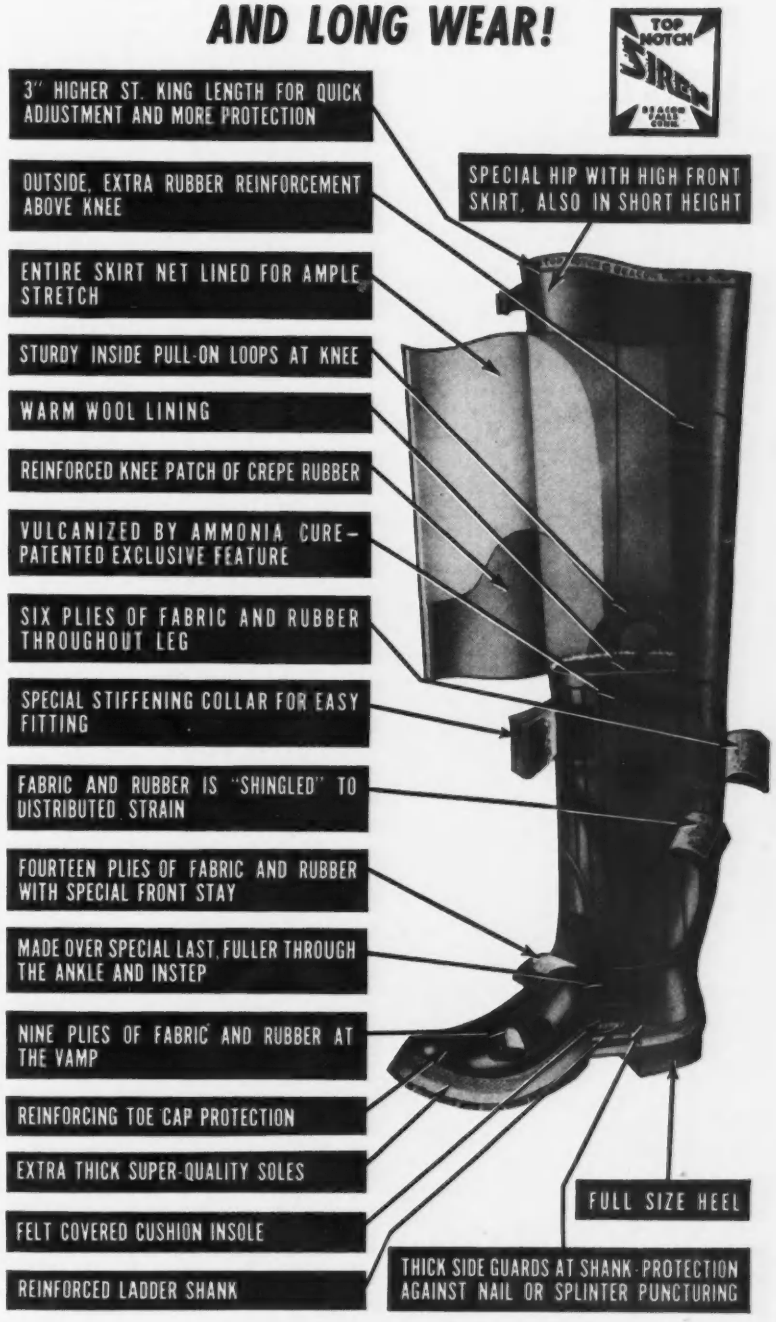
How to Determine Flow When FL is Known

Start with the 3-lb. friction loss per 100 ft. and remember 105 gpm (just a little over 100 gpm). To determine flow for higher amounts of FL, add 15 gpm flow for each additional lb. of friction loss up to 8 lbs. Then bracket the figure "8" with a 1 and a 0, giving 180 gpm. Then add 10 gpm for each additional lb. pressure loss per 100 ft. until 18 lb. loss is reached. (Note that 13 lb. FL results from 230 gpm flow; 16 lb. FL results from 260 gpm flow, etc.) From 18 lb.-pressure loss upward, each additional 5 gallons causes another lb. loss as the hose is getting crowded and the velocity is high. Thus 22 lb. FL results from 300 gpm flow. To find the gpm causing 25 lb. FL just place the digit 3 in front of the 25, giving 325 gpm.

Another method is to remember that with flows of between 180 and 280 gpm, the friction loss in 1,000 ft. of 2½-in. hose is about 100 less than the gpm. This will take care of most conditions encountered in long 2½-in. lines.

SIREN FIREMAN'S BOOT

20 KEY FEATURES--YOUR GUARANTEE OF FOOT COMFORT, SAFETY AND LONG WEAR!


TOP NOTCH SIREN
3" HIGHER ST. KING LENGTH FOR QUICK ADJUSTMENT AND MORE PROTECTION
OUTSIDE, EXTRA RUBBER REINFORCEMENT ABOVE KNEE
ENTIRE SKIRT NET LINED FOR AMPLE STRETCH
STURDY INSIDE PULL-ON LOOPS AT KNEE
WARM WOOL LINING
REINFORCED KNEE PATCH OF CREPE RUBBER
VULCANIZED BY AMMONIA CURE--PATENTED EXCLUSIVE FEATURE
SIX PLIES OF FABRIC AND RUBBER THROUGHOUT LEG
SPECIAL STIFFENING COLLAR FOR EASY FITTING
FABRIC AND RUBBER IS "SHINGLED" TO DISTRIBUTED STRAIN
FOURTEEN PLIES OF FABRIC AND RUBBER WITH SPECIAL FRONT STAY
MADE OVER SPECIAL LAST, FULLER THROUGH THE ANKLE AND INSTEP
NINE PLIES OF FABRIC AND RUBBER AT THE VAMP
REINFORCING TOE CAP PROTECTION
EXTRA THICK SUPER-QUALITY SOLES
FELT COVERED CUSHION INSOLE
REINFORCED LADDER SHANK
SPECIAL HIP WITH HIGH FRONT SKIRT, ALSO IN SHORT HEIGHT
FULL SIZE HEEL
THICK SIDE GUARDS AT SHANK PROTECTION AGAINST NAIL OR SPLINTER PUNCTURING

BEACON FALLS RUBBER FOOTWEAR
BEACON FALLS, CONNECTICUT

FIRES IN THE NEWS

Norwegian Freighter, New York, July 19. (*United Press Photo*) Three crewmen died when this ship, carrying a cargo of napthalene and castor oil, was involved by fire 65 miles southeast of Montauk Point. Fireboats of the New York Fire Department responded to an S.O.S.

Oyster House, Pittsburgh, Pa., July 13. (*International News Sound-Photo*) A defective motor was believed to be the cause of this fire that destroyed this unsprinklered restaurant with a loss of an estimated $100,000. Four fire fighters were injured.

Warner Bros. Studio, Los Angeles, Cal., July 10. (*International News Photo*) An estimated $4,000,000 damage was caused by the second major fire to involve this motion picture studio in less than three months. This fire destroyed 2 storage sheds containing 2,000 "props."

Alliance Furniture Company, Jamestown, N. Y., July 16. A watchman shut off the sprinkler system and delayed sending an alarm when fire involved this 4-story brick manufacturing warehouse. Fire fighters could not reach valve for sprinklers on arrival. Despite mutual aid of 8 volunteer departments, estimated loss amounted to $500,000.

A GREAT TEAM of FIRE-FIGHTING PUMPS

-pulling together for YOU!

Like all great teams, these pumps really *pull together!* For booster service, the American-Marsh 3XD Auxiliary Pump is *tops!* From pond, stream or cistern, it'll supply two 1½" hose lines or one 2½" line, depending on nozzles used. And it's better-than-ever now with increased power and reduced weight.

Working with it, you'll want the superior performance and great dependability of the Barton-American DMA Multistage Midship Pump — or the Gear-Driven UA Front-Mounted Model. Either one will give your department peak fire-fighting effectiveness — plus unique operational advantages. Make *yours* an *all-American-Marsh team!*

WRITE FOR BULLETINS: No. 8120 (3XD Booster) No. 8733 (DMA Pump) No. 8330 (UA Pump)

AMERICAN-MARSH PUMPS

BATTLE CREEK MICHIGAN

CANADIAN APPARATUS PLANT:
American-Marsh Pumps (Canada) Ltd.
Stratford, Ontario, Canada.

Don't Be Too Late at Your Airport

(*Continued from page 17*)

After one recent airport fire, a local Fire Marshal wrote the NFPA as follows: "Most certainly, no one under God's Heaven handles gasoline in a more *studiously careless* manner than airport employees."

Hangar Fires Average Large

Based on an NFPA study*, the *average* loss in 269 hangar fires is $175,000. Broken down, the average building loss is $2.72 per square foot, the average contents loss, $7.00 per square foot. The average hangar has a floor area of 18,000 sq. ft., in other words a building measuring about 150 ft. wide and 125 ft. long. According to the record, each time a hangar burns, six planes are destroyed! In about three-quarters of the fires, a general roof collapse occurs.

In other words, the next call you get to the Airport is liable to be a big one! Prepare now your fire defense.

* For complete details, request NFPA FR-52-2, a 56-page study of Hangar Fire Experience. Available from the NFPA, $5.00 per copy.

●

New German Fire Journal

TWO years ago a German Fire Protection Association (Vereinigung zur Deutschen Brandschutzes) was formed. The progress of this new association was marked in June, 1952, with the publication of the first issue of an official magazine to be known as "Research and Techniques in Fire Protection, Journal of the German Fire Protection Association ("VFDB Zeitschrift, Förschung und Technik in Brandschutz").

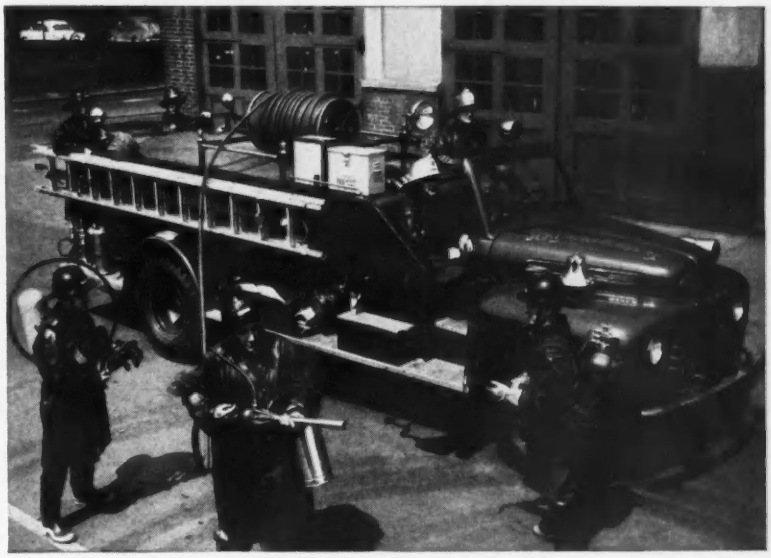
The June issue is beautifully presented and illustrated in a format 8¼ by 11¾ inches, 56 pages, on coated paper. Before the last war, the German fire associations published many fine technical articles and the new magazine, to be published quarterly, appears to be resuming this tradition.

The publishers are W. Kohlhammer, Urbanstrasse 12–14, Stuttgart O, Germany. Foreign subscriptions are accepted for 12 deutschmarks ($2.88 approximately) plus postage.

Ford's RIVER ROUGE PLANT

SELECTS Scott Air-Paks TRADE-MARK FOR

24 – HOUR FIRE PROTECTION



Trained firemen, protected by SCOTT AIR-PAKS and other equipment specially designed to reduce the danger of serious fires, are on duty 24 hours a day at the Ford Motor Company's River Rouge plant. Never certain what terrific breathing hazards the next fire will include, plants like Ford's, play safe by carrying SCOTT AIR-PAKS to every emergency.

Often Scott units have made it possible for firemen to get to the sources of small plant fires before they could develop into big blazes, endangering many lives and millions of dollars in property. Peace of mind and complete confidence is inspired by plenty of COOL, PURE AIR, (not oxygen) as the men do their jobs safely, with lungs and eyes protected from dangerous atmospheres.

Thousands of SCOTT AIR-PAKS are protecting health and lives and saving production time on *maintenance and repair work too* — in plants throughout the nation.

See your Safety Equipment Dealer or WRITE US today for full details, literature.

ESTABLISHED IN 1932 Scott FOR SAFETY—FOR SERVICE

SCOTT SLING-PAK... Fast, lightweight Scott unit for emergencies — where speedy action counts!

WRITE FOR FULL DETAILS TODAY

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

236 ERIE STREET, LANCASTER, N. Y.

CANADA: SAFETY SUPPLY CO., TORONTO — BRANCHES IN ALL PRINCIPAL CITIES

EXPORT: SOUTHERN OXYGEN CO., 157 Chambers Street, New York 7, N. Y.

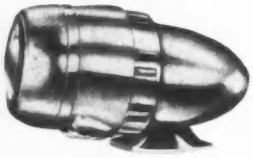
more **LIGHT**
more **SOUND**
more **SAFETY** with

FEDERAL SIGNALS

Federal warning signals are daily more indispensable to more departments, and it's plain to see why — Federal has a complete line — a signal for every purse and purpose.

CLASS Q

4 models of the loudest and most powerful vehicle siren on the market. Unequalled and in a class by itself.



CLASS C

8 models of super coaster sirens; low pitch and very powerful for extremely severe traffic conditions.

CLASS 70

8 models of double tone sirens with coaster feature.

CLASS 60

4 models of heavy duty sirens for all emergency duties.

CLASS E-W

8 models equal to anything offered in the industry. Effective sirens at moderate prices

CLASS V

3 models for the personal cars of Volunteer Firemen.

THE BEACON RAY

America's most famous emergency vehicle light. 360° protection. Nothing equals it.

THE PROPELLO RAY

The rotating beam light long popular on fire apparatus.

THE SCATTER RAY

A 360° flashing light at a very low price. For all emergency purposes.

Write for catalog today!

FEDERAL ENTERPRISES, Inc.
formerly: Federal Electric Company
8717 S. State Street **Chicago 19, Ill.**

Fire Prevention in Fort Wayne, Indiana

(*Continued from page 18*)

blueprints figuring out the messages we wanted, then took it to our bus company and sold them on the idea.

Johnny, of the Philip Morris Cigarette Company, also appeared in our city and appeared at a banquet and gave a brief talk on fire prevention.

We tried a number of means of teaching home fire prevention. Number one was a laundry insert. Every parcel of laundry that went out in the City of Fort Wayne carried a fire prevention message. The only way we could sell this idea to a laundry man to spend $500 for these was to tell him he was showing the public that he was interested in performing a service.

The message on the insert read, "Fire Prevention Week occurs from October 7 to October 13. It reminds us (the laundry) of one of our obligations to our customers. Every bundle you send us is assured against fire from the time it leaves your house until it is returned to you. We constantly guard against fire at our plant. Do you do the same in your home?"

. Another thing was 50,000 milk bottle hangers with the message "Fire Prevention Week occurs on October 7 to October 13. Do you know 700 American homes burn every day, 28 American citizens every day die, and you must stop fires and save lives." Then it says, "Drink more milk and build your bones, put out the fires and save your homes."

During Fire Prevention Week we also inspected 30,000 dwellings with the help of our Girl Scouts. We called on each of the 30,000 dwellings, girls in pairs, assisted by the fire department. Inspections were made and fire prevention materials left to show where hazards would be found.

Now, we have tried a few other gimmicks in the City of Fort Wayne. Here is a little gun (illustrating), which you are all familiar with. This was put out by the Fort Wayne Association of Insurance Agents again with the idea that they were getting into contact with the kid and through that were getting to the home. It said, "Don't let this backfire, shoot straight, fire prevention."

We also conducted a limerick contest and have had some very, very amusing results as well as gaining some good out of it. Last year our limerick was:

"Don't gamble with fire is good advice,
Your life is at stake, you can't lose twice,
To fire prevention give your attention . . .

and then they were supposed to add the last line. The winning line said, "Every day's vigilance is safety's price."

We had in the neighborhood of 1500 responses to this limerick contest, and we only gave a $25 war bond as the top prize on this.

In concluding I would like to say this: There isn't any use made of magic wands in our programs. And there is a lot more to our program than what I have mentioned; but there is a whale of a lot, gentlemen, of that old Americanism that is called cooperation. You and I as Fire Marshals and members of fire departments have got to recognize the fact that the world is changing. Get in there on fire prevention, and do a job and sell it in the manner that the American people want.

Believe me, there has never been a time when there is more of a need for fire prevention than there is today. And when you and I are prone to get a little pessimistic in our chosen profession, let's remember what Charles Dickens, the great author, wrote one time when he said, "Whatever a man's profession is, he owes it to himself and to the profession to do the best that he knows how and to demand for that profession the respect that it deserves."

Pamphlet on Hydraulics

THE Fire Insurance Division of the Board of Insurance Commissioners, Austin, Texas, has reprinted a pamphlet entitled "Simplified Hydraulics for Firemen." This useful publication will be sent free of charge upon request from individual firemen or from fire departments. Single copies are available to individuals and small quantities to fire departments. Write to the address mentioned above.

NFPA Inspection Manual
336 pp. $3.00 per copy
National Fire Protection Association
60 Batterymarch Street, Boston 10, Mass.

CAIRNS FIRE HELMETS

AMERICA'S "REGULATION" STANDARDS

The "NEW YORKER"
No. 5A
The "original" leather helmet, introduced by CAIRNS in the early 1800's and steadily improved through the years since. Its specially-tanned top-grain steer hide and superior design make the "NEW YORKER" the safest, toughest, strongest, most durable helmet on the market.

The "SENATOR"
No. 350
Pressed from one piece of rolled aluminum, with corrugated 4-comb crown and reinforced beaded brim, the "SENATOR" meets the preferences of those seeking a light-weight helmet that is comfortable, safe, strong and durable.

The "CLIFTON"
No. 900
Here's the latest of the modern "plastic" helmets—a replica of the "NEW YORKER" in style, but molded in CAIRNS "Flint-Flex" — hard but not brittle, tough and flexible while still keeping its shape, light in weight, non-conducting, chemical-resistant.

The CAIRNS line also includes other helmets in drop-brim and other styles— in leather, aluminum and "Flint-Flex," and in other weights— all of standard CAIRNS QUALITY. We can supply everything the fireman needs for his personal equipment. Write for Catalog 340.

CAIRNS & BRO., Inc. - Allwood, Clifton, N. J.

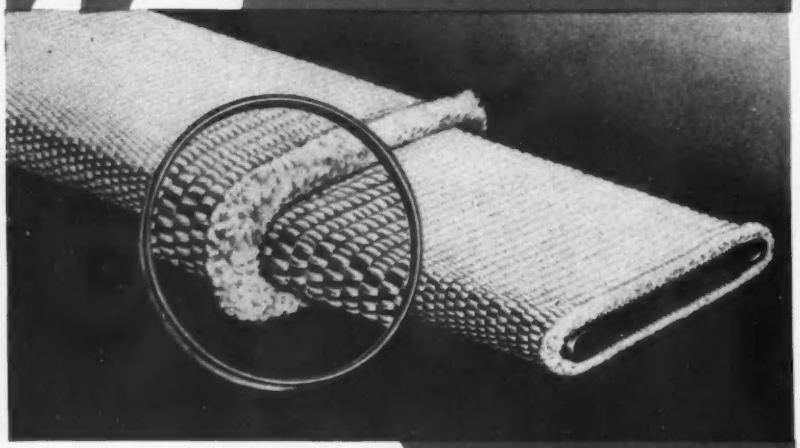
SINCE 1836

GENERAL

EZ-Folding

"SUPERFLEX"

Fire Hose



The only Fire Hose in the world having hinge-like folding cotton jackets—plus rubber lining freedom at points of fold to prevent torture of the rubber.

Firemen like Superflex EZ-Folding Fire Hose because it is less burdensome to handle—and 15% to 20% more hose can be loaded on a Fire Truck than the ordinary type.

LINEN FIRE HOSE

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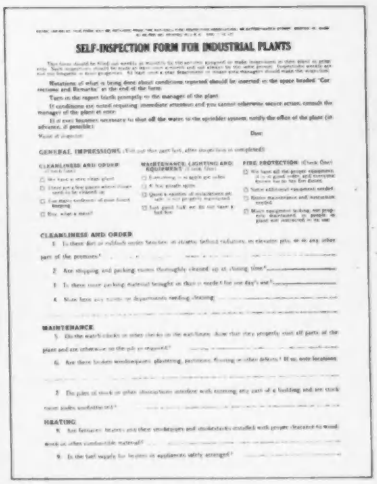


SELF-INSPECTION FORM FOR INDUSTRIAL PLANTS

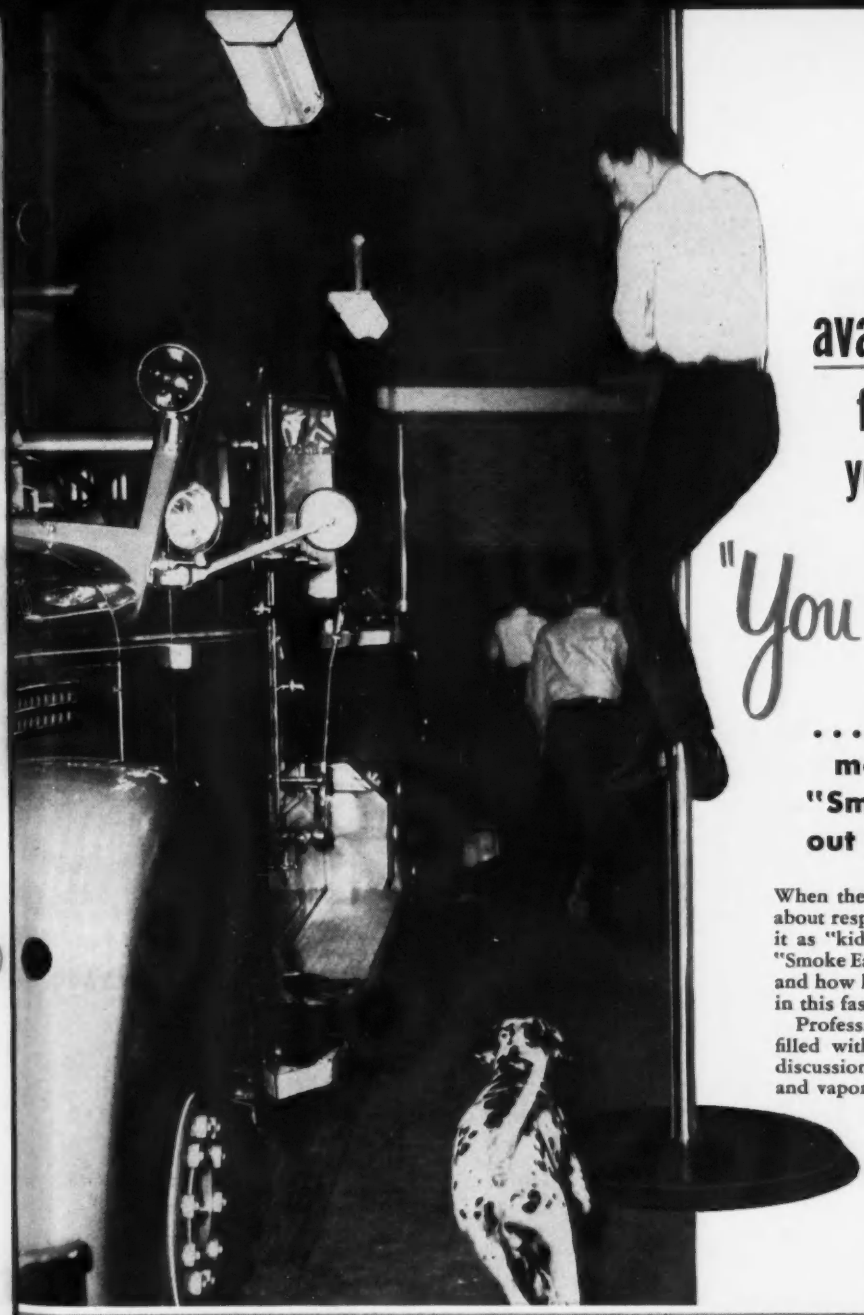
Inspection Form for Industrial Plants

THE above blank should be very useful to personnel in industrial plants responsible for fire protection and fire prevention. It clearly outlines procedures for inspections and suggests the type of equipment to be inspected and reported. It allows the inspector to make a simplified report on the cleanliness and order, lighting and equipment, and fire protection facilities of a plant area. Industrial fire brigade members will find it useful for making periodic inspections of property and equipment for which they are responsible.

Quantities of this form (8½ x 11-in.) may be obtained from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts. Price is only $1.00 per hundred copies.

Design of Buildings Against A-Bombs

A TECHNICAL manual has been issued by the U. S. Federal Civil Defense Authorities entitled "Interim Guide for the Design of Buildings Exposed to Radiant Heat." It embodies data which it has been possible to bring together from official sources. It deals only briefly with fire problems but is devoted principally to methods for making structures stronger and the design of protected areas in buildings. The pamphlet may be obtained from the U. S. Superintendent of Documents, Washington 25, D. C., TM-5-3, 40 pages, 15 cents.



This Movie available *NOW* for Showing to your Department

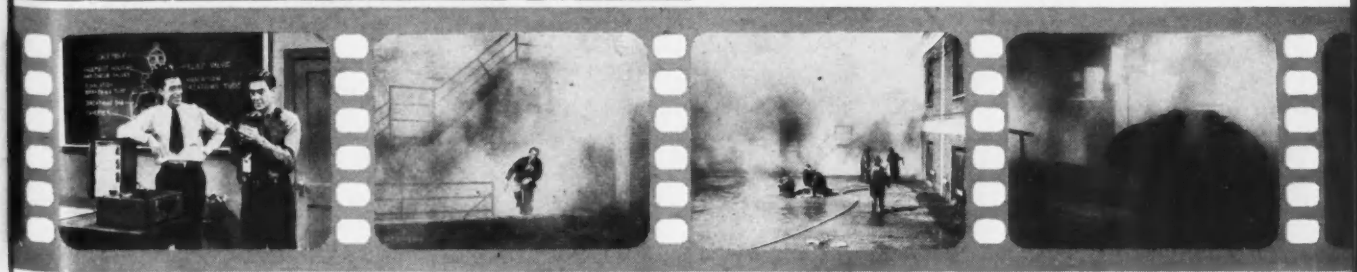
"You Bet Your Life"

. . . an educational sound motion picture about a "Smoke Eater" who found out too late he was wrong

When the boys at the station house started talking about respiratory protection, "Chop Happy" classed it as "kid's stuff" and refused to listen. He was a "Smoke Eater" and that's all there was to it. His story, and how he bet his life and lost, is dramatically told in this fast-moving, authentic sound motion picture.

Professionally produced, "You Bet Your Life" is filled with action-packed scenes, attention-holding discussions on the harmful effects of smoke, gases, and vapors, and educational demonstrations of fire-fighting masks and their uses . . . ideal material for training classes and refresher instruction for veterans.

This 16 mm., sound film is non-commercial. Plan now for a free showing to your department. You'll find it a profitable way to spend the 25 minutes it takes for a showing. Clip coupon at bottom of ad and mail today!



MSA
SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you.

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Sts.,
Pittsburgh 8, Pa.
At Your Service: 68 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED
Toronto, Montreal, Calgary, Winnipeg, Vancouver, New Glasgow, N.S.
Representatives in Principal Cities in Mexico, Central and South America
Cable Address "MINSAF" Pittsburgh

Mine Safety Appliances Co.
Pittsburgh 8, Pa.

Please arrange to send the film—"You Bet Your Life" for showing about

_____(date)

Name_____

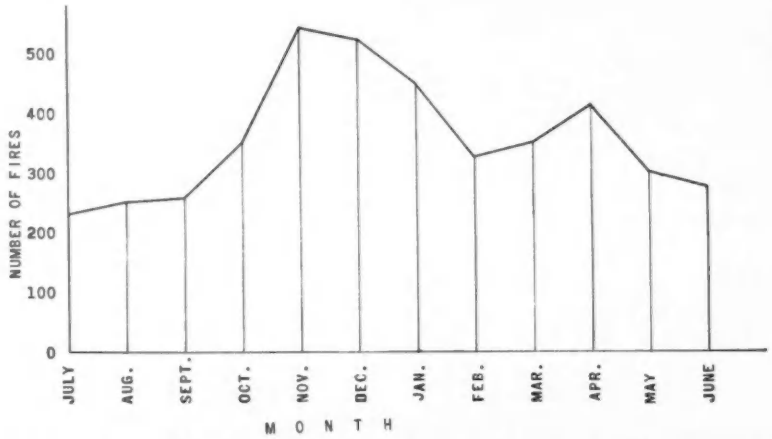
Title_____

Company_____

Address_____

Are You Ready for the "Tough" Months?

SEPTEMBER is the time for fire departments to prepare for the "heavy fire load" that inevitably occurs during the cold weather months ahead. At this time of year people have returned to their homes after the vacation season. Schools, theatres, and auditoriums are being reopened. Industry is preparing for longer working hours and increased production. Mercantile properties have large inventories of stock. Warehouses, grain elevators, lumber yards and tank farms are filled to capacity. Nearly all occupancies prepare for the winter activity and this preparation brings about many potential fire hazards.



This graph represents the monthly trend of fire losses of a mid-western state whose climate approximated the nation's average. Climatic changes may appreciably revise the shape of the graph but it fairly represents the danger months of the majority of states and provinces.

Monthly Trend of Fire Losses

The chart on this page represents the monthly fire losses of a mid-western state during 1950. It shows how fire losses rise steadily during the months of September through November, inclusive; and are at their lowest point during June, July and August.

Obviously, the increased activity during the months of heavy fire losses, coupled with decreased temperatures and humidity of colder weather exposes potential fire hazards to a higher ratio of probability. More people in buildings means more building fires caused by smoking and matches. Shorter days bring increased use of electric facilities. Colder weather necessitates constant use of heating systems.

In fact, during the coming months, the entire trend of activity will tax all potential fire hazards in all states and provinces, regardless of climate.

DEPENDABLE DRESSINGS

for FIRST AID, for EMERGENCY
for DISASTER, for DEFENSE

With a distinguished record of use by the medical services of the Armed Forces, by other governmental agencies, by hospitals, by emergency and disaster units, by industrial clinics and first-aid stations . . .

Now in three sizes:
No. 1: 3" x 36" (6 in carton)
No. 2: 3" x 18" (12 in carton)
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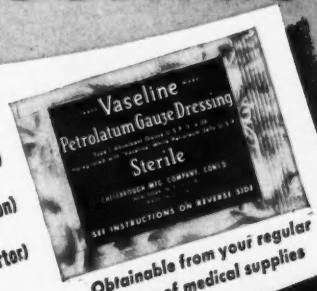

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VASELINE STERILE PETROLATUM GAUZE DRESSINGS

TRADE-MARK (R)

...always STERILE, always READY for immediate and easy application to dress a burn, an abrasion, and other surface injuries.

have been adopted by surgeons as standard procedure, by nurses as preferred matériel, by professionally-trained aid personnel as the compact, ready-made, ready-to-apply dressing of their choice.

CHESEBROUGH MFG. CO., Cons'd
Professional Products Division • New York 4, N. Y.

Specify these superior dressings in the foil-envelopes to your supplier.

VASELINE IS THE REGISTERED TRADE-MARK OF THE CHESEBROUGH MFG. CO., CONS'D

The dates set aside for Fire Prevention Week were not chosen solely as the anniversary of the great Chicago fire, but as the appropriate time to prepare for these dangerous months. Fire Prevention Week occurs at just the right time for firemen to prepare for these dangerous months.

WHAT then should be the procedures for an effective program of Fire Prevention Week activities?

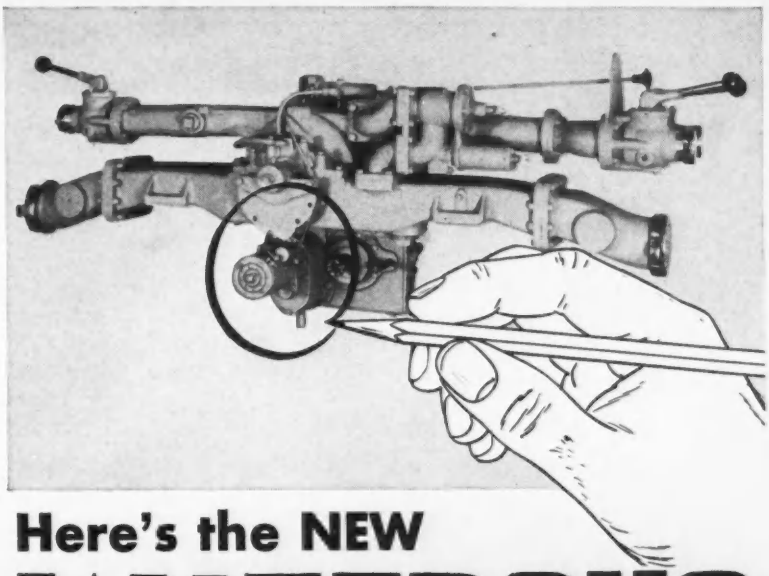
The ideal situation would be an extensive inspection and educational program covering all types of occupancies in the area protected by the fire department. If such a program cannot be undertaken, another desirable method is direct mail canvassing with NFPA Fire Prevention Week pamphlets and self-inspection forms. (See August, 1952, FIREMEN.) Such a program can be supplemented by placing NFPA Fire Prevention Week posters in all appropriate areas.

Fire department members should take this opportunity to maintain constant contact with the public. Schools, clubs, and various organizations welcome the opportunity to hear from members of the local fire department. Local newspapers are an excellent source for reaching the bulk of the city population. Radio broadcasting stations are also a good source for disseminating fire prevention information by the fire chief or a capable representative.

MANY of these suggestions are also applicable to volunteer and rural fire departments. Many rural fire departments have more area to protect per fire department station than does the average city or urban fire department. The additional property protected by the rural department represents an extremely large percentage of the total property value.

An inspection program of farm property may be easily arranged and represents the best method of promoting fire safety measures. (See "Making a Rural Fire Safety Survey" in June 1952, FIREMEN.) An advantageously scheduled radio program on farm fire prevention would also be effective, since many farm owners rely upon the local radio station for up-to-date figures for

(*Please turn to page 42*)

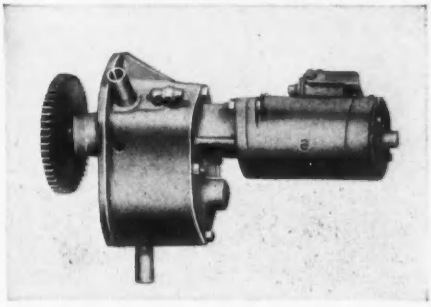


Here's the NEW

WATEROUS

Electric

PRIMING PUMP



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Close the discharge valves and push button.

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International

Specifications
for
MOTOR FIRE APPARATUS

For the City of

1952

Approved by
NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS
NATIONAL BOARD OF FIRE UNDERWRITERS

1952 Specifications for Motor Fire Apparatus

THE 1952 edition of Specifications for Motor Fire Apparatus in the 8½ x 11 in. contract form size is now ready for distribution. This edition incorporates the changes recommended by the NFPA Fire Department Equipment Committee at the 56th NFPA Annual Meeting.

The specifications cover provisions for pumper apparatus, water tank fire apparatus, ladder trucks (aerial), and ladder truck and pumpers (quadruple combination), and for the first time have received the joint approval of the National Fire Protection Association, the International Association of Fire Chiefs and the National Board of Fire Underwriters.

In addition to incorporating the recommended changes the specifications also include the appendix which provides information to municipal officials responsible for the purchase of motor fire apparatus.

Copies of the contract form edition may be obtained for $1.00 each from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

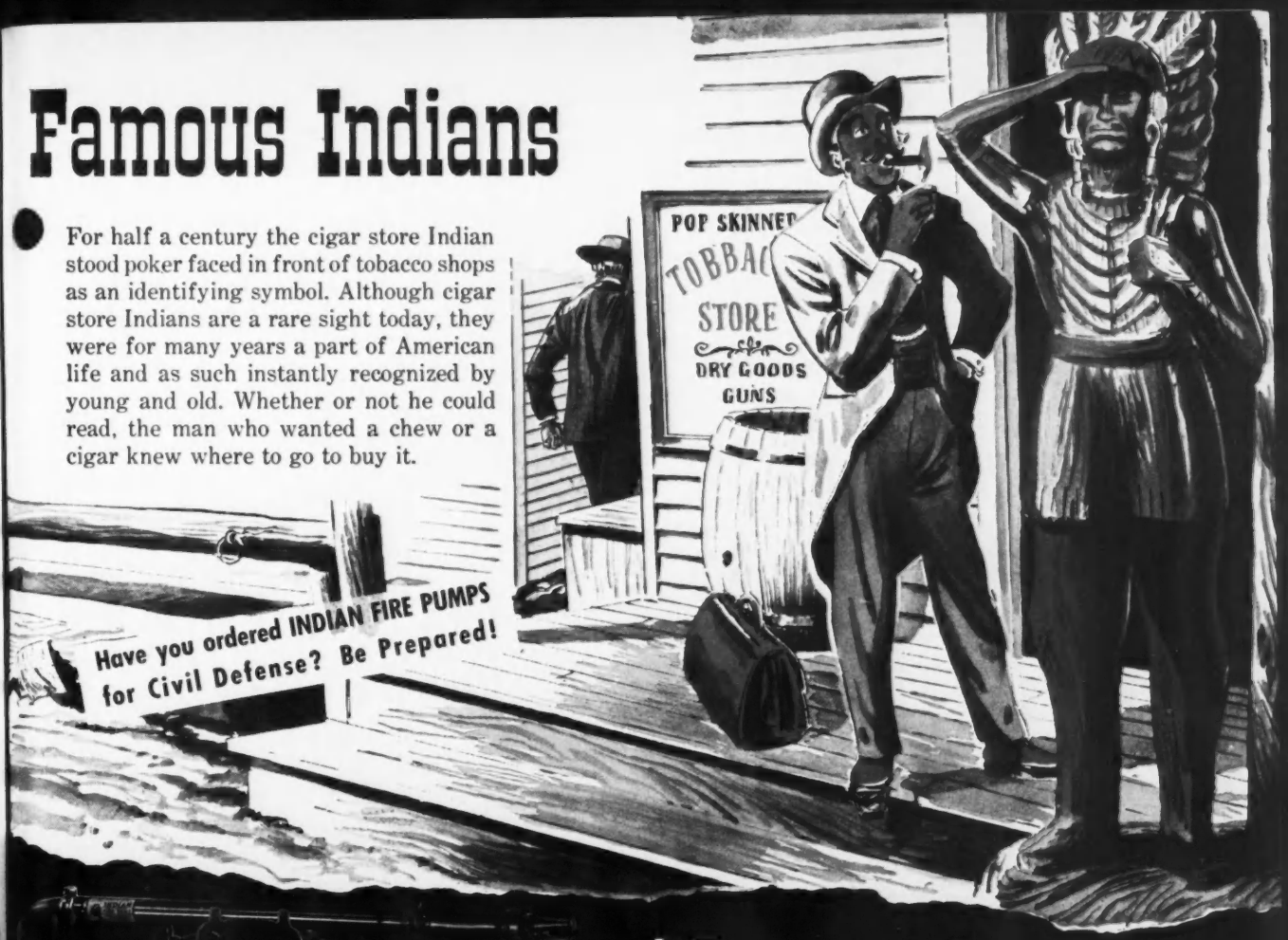
The specifications have also been published in a pocket-size edition available at fifty cents each with discounts for quantity purchases.

"You Bet Your Life" Film

WHY should firemen use respiratory protection when fighting fires? A 25-minute, 16 mm. sound movie "You Bet Your Life" is available without charge to interested departments from the Mine Safety Appliances Co. (See page 37).

Famous Indians

For half a century the cigar store Indian stood poker faced in front of tobacco shops as an identifying symbol. Although cigar store Indians are a rare sight today, they were for many years a part of American life and as such instantly recognized by young and old. Whether or not he could read, the man who wanted a chew or a cigar knew where to go to buy it.



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Are You Ready for the "Tough" Months?

(*Continued from page 39*)

produce prices and new developments in farming methods.

Rural areas with vacation facilities that require closing for the winter also present problems to rural fire departments. Owners of these properties should be instructed on proper fire safety measures to be applied when a building is left unattended for several months. (See new tentative NFPA Fire Prevention Standard for Homes, Buildings and Camps in Forested Areas, No. 244T.)

Fire Department Preparation for Winter

PERSONNEL and equipment check-up is standard practice with most progressive departments. Large city departments are able to schedule definite overhaul periods for equipment and apparatus through their own maintenance shops. Intermediate and small departments must for the most part depend upon hose men, ladder men, and drivers to check their own equipment and maintain it properly. The following suggestions may be helpful reminders to both urban and rural departments:

Storage batteries age faster during hot weather than any other period of the year due to the increase of the chemical reaction as a result of the heat. However, weak cells invariably go dead at the most inopportune time without any forewarning with the advent of cold weather starting. Check the age of the battery through your purchase receipt or by the numbers stamped on the top of the cell connectors on the top of the battery. (The manufacturer or local distributor will supply you with the code for identifying the date of the manufacture.)

Tire pressures should be checked in accordance with the recommendations of the NFPA Pamphlet No. 19 on "Specifications for Motor Fire Apparatus." This is an important item. Some apparatus may have under-sized tires for the loads carried.

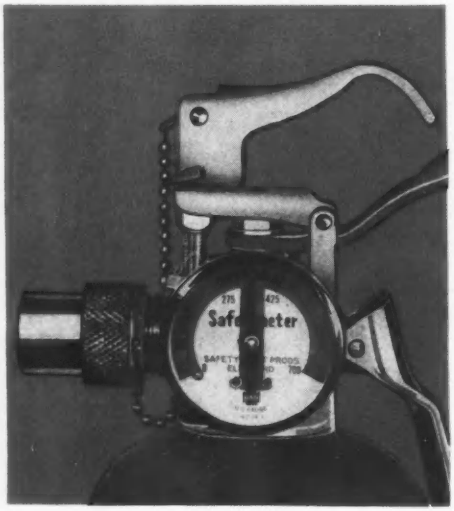
A supply of sand and salt for slippery travelling is a desirable asset to any piece of apparatus.

Check chain sets for broken or worn links and replace whole cross links where needed. Monkey links for emergency use should not be a permanent part of a set of chains for fire truck tires.

All apparatus should have the radiators flushed and the proper anti-freeze solutions put in before cold weather arrives. Permanent anti-freeze is preferable because its boiling point is higher which is an important factor in pumpers that may be in operation for long periods of time. While winterizing the apparatus, allocate equipment to garages for checking ignition systems and general tune-up.

Drain all small lines that are kept wet in warm weather. Make sure all water is removed from pump chambers. (NFPA standards call for a minimum of 40° F. in buildings housing fire equipment.

DO YOU *KNOW* YOUR FIRE EXTINGUISHER WILL OPERATE?



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DRY CHEMICAL FIRE Extinguisher

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FOR
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FIRE
OPEN
THEN
PULL DOWN
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TOO FEW - TOO LATE!
Nearly 400,000 fires and two-thirds of the life loss by fire occur annually in residences. Delayed alarms and tragic consequences are frequently caused by inadequate box distribution in residential districts.

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IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., BELLEVILLE, ONTARIO

What's New in Fire Equipment?

Continuous Flow Hose Reel

Wirt & Knox Mfg. Co., Sedgley Ave., York and 23rd Sts., Philadelphia 32, Pa., have developed a continuous flow hose reel. A swivel joint connection in the pipe line permits application of water while the hose is being unreeled. A universal mounting permits installation on walls, columns, ceilings or floors making the hose reel useful to industrial plants. A complete range of sizes is available. An illustrated folder may be obtained by writing to the manufacturer at the above address.

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Flash 'N Wag
Flashing, oscillating WIG-WAG Redhead beam quickly clears the driver's side of the road as well as warning those approaching. Sends powerful signals 1,000 ft. ahead. Visible for miles. Safer, faster, quieter runs. 6" and 8" diameter sizes.
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One of 100 Carpenter Emergency Lights. Write for Catalog
CARPENTER MFG. COMPANY
BOSTON 45 - SOMERVILLE, MASS.

Safety Candle with Four Color Discs

A new, battery-operated *Safety Candle* which eliminates flame and dripping should interest fire prevention authorities. Used by churches, choirs, processions, pageants, conventions and fraternal orders, the 8-inch *Safety Candle* provides four different colors of light. Write to Louis J. Lindner, 153-NF, West 33rd Street, New York 1, N. Y.

New Pressurized Extinguisher

A new 1 to 2-quart vaporizing liquid fire extinguisher designated as the "Pressurized Model B" has been announced by the Fyr-Fyter Company, 221 Crane Street, Dayton, Ohio, featuring hand grip operation. It discharges its contents in 17 to 25 seconds. To simplify inspection, cleaning and recharging, the entire valve assembly and pick-up tube unscrew as a unit from the shell. The extinguisher has been listed by Underwriters' Laboratories. Further information may be obtained from the manufacturer at the above address.

MSA Booklet

Mine Safety Appliance Company has published an illustrated pocket-size booklet providing information on the company, its officers and key executives, domestic and foreign plants, offices and warehouses, and local transportation and hotel data. The 5-by-7-inch booklet also gives details on MSA purchasing department and other information which would be helpful to fire departments who have contact with this concern. Copies of the booklet may be obtained from any of the MSA offices in the United States.

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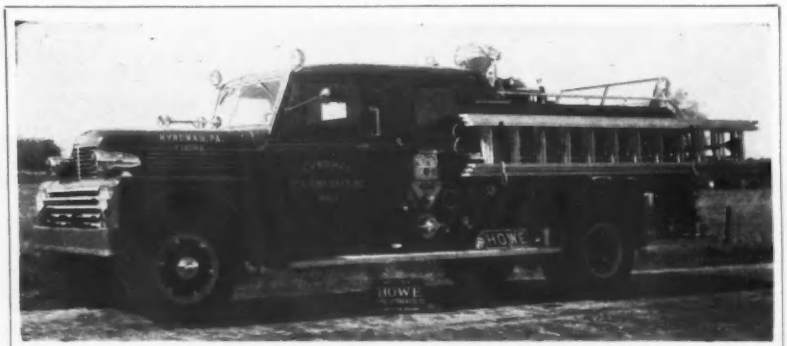

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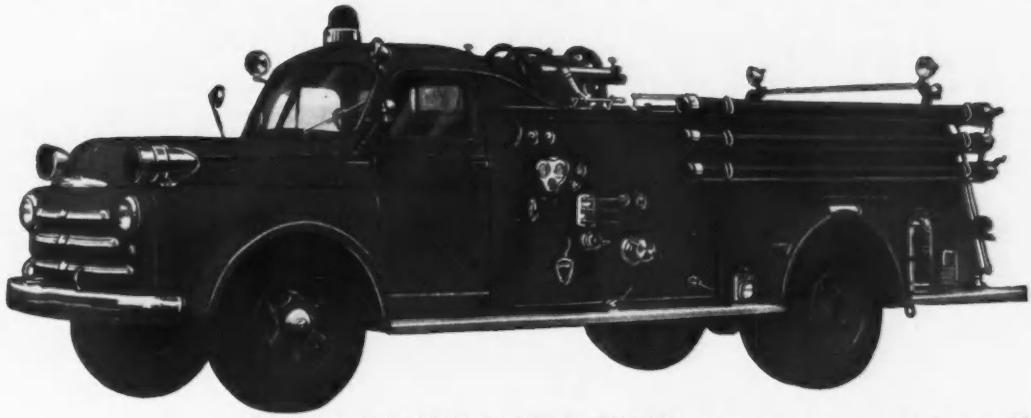

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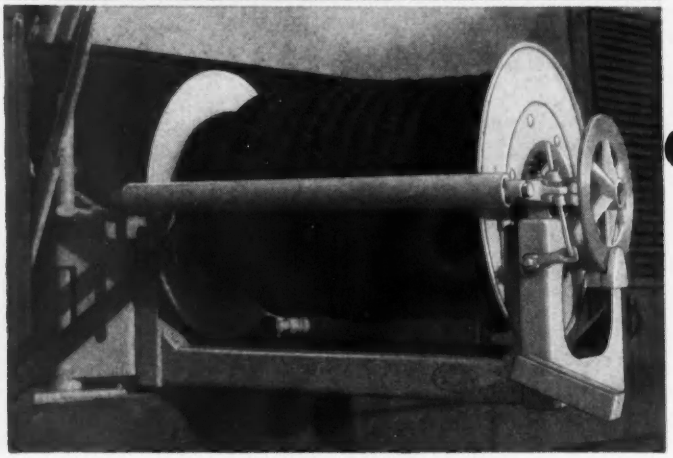

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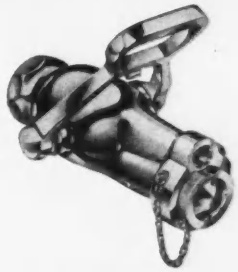
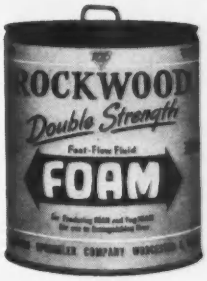
Engineers Water... to Cut Fire Losses



Type SG-48 WaterFOG Nozzle. Easy to handle. Discharges high or low velocity WaterFOG or straight water stream.



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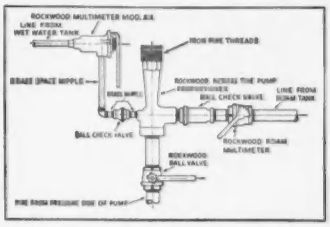

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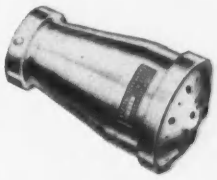

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